PUBLIC VERSION

BEFORE THE
SURFACE TRANSPORTATION BOARD

STB Docket No. 42088

WESTERN FUELS ASSOCIATION, INC. AND
BASIN ELECTRIC POWER COOPERATIVE, INC.
v.
BNSF RAILWAY COMPANY

Reply Evidence and Argument of
BNSF Railway Company

NARRATIVE

Volume I of II

Richard E. Weicher
Michael E. Roper
BNSF RAILWAY COMPANY
2500 Lou Menk Drive
Fort Worth, TX 76131
(817) 352-2353

Samuel M. Sipe, Jr.
Anthony J. LaRocca
Linda S. Stein
STEPTOE & JOHNSON LLP
1330 Connecticut Ave, N.W.
Washington, DC 20036
(202) 429-3000

ATTORNEYS FOR
BNSF RAILWAY COMPANY

July 20, 2005

Table of Contents

Page

Page

Page

Page

Page

Page

ABBREVIATIONS

Terms:

AAR	Association of American Railroads
AFE	Authority for Expenditure
AREMA	American Railway Engineering and Maintenance of Way Association
Basin or Basin Electric	Basin Electric Power Cooperative
BN	Burlington Northern Railroad Company
BNSF	BNSF Railway Company
CFM	Cubic Feet Per Minute
CMP	Constrained Market Pricing or Corrugated Metal Pipe
CP	Control Point
CTC	Centralized Traffic Control
CY	Cubic Yard
DAF	Dissolved Air Flotation
DARA	Density Adjusted Revenue Allocation
DCF	Discounted Cash Flow
DED	Dragging Equipment Detector
DOT	Department of Transportation
EIA	Energy Information Administration
ENR	Engineering News Record Construction Cost Index
EPA	Environmental Protection Agency
FC	Foot Candles
FED	Failed Equipment Detector
FEMA	Federal Emergency Management Act
FRA	Federal Railroad Association
GMP	Gallons per Minute
GPD	Gallons Per Day
GPRM	Generalized Percentage Reduction Methodology
GTM	Gross Ton Mile
HAL	Heavy Axle Loading
HBD	Hot Bearing Detector

Terms:

IBC	International Building Code
ICC	Interstate Commerce Commission
ICS	Independent Control Switch
Laramie River	Laramie River Station
LF	Linear Foot
LMR	Land Mobile Radio
LRR	Laramie River Railroad
LRS	Laramie River Station
LUM	Locomotive Unit Mile
MGT	Million Gross Ton
MOW	Maintenance of Way
MP	Milepost
MSP	Modified Straight-Mileage Prorate
Nar.	Narrative
NORAC	Northeast Operating Rules Advisory Committee
NT	Net Ton
OTM	Other Track Material
PITO	Point of Intersection of Turnout
POTW	Publicly Owned Treatment Works
PPI	Producer Price Index
PRB	Wyoming Powder River Basin
PSI	Pounds per Square Inch
PSP	Plated Steel Pipe
RCAF	Rail Cost Adjustment Factor
RCAF-A	Rail Cost Adjustment Factor-Adjusted for Changes in Productivity
RCAF-U	Rail Cost Adjustment Factor-Unadjusted for Changed in Productivity
RCB	Reinforced Concrete Box
ROW	Right of Way
RPI	Road Property Investment
RSAM	Revenue Shortfall Allocation Method
RS Means or Means	RS Means Heavy Construction Handbook

Terms:

RTC	Rail Traffic Control
R/VC	Revenue-To-Variable Cost
SAC	Stand-Alone Cost
SARR	Stand-Alone Railroad
SEM	Switch Engine Minute
SF	Square Foot
SPP	Structural Plate Pipe
SY	Square Yard
UMF	URCS Master File
UP	Union Pacific
URCS	Uniform Rail Costing System
USGS	United States Geological Survey
VHF	Very High Frequency
WFA	Western Fuels Association, Inc.
WRPI	Western Railroad Property, Inc.
WWTP	Waste Water Treatment Plant

CASE NAMES

WTU	*West Texas Utilities Co. v. Burlington Northern R.R. Co.*, 1 STB 638 (served May 3, 1996)
APS	*Arizona Public Service Co. v. The Burlington Northern and Santa Fe Ry.*, STB Docket No. 41185 (served May 12, 2003)
Coal Rate Guidelines or *Guidelines*	*Coal Rate Guidelines, Nationwide*, 1 I.C.C.2d 520 (1985)
Coal Trading	*Coal Trading Corp. v. Baltimore & Ohio Railroad Co.*, 6 I.C.C. 2d 361 (1990)
CP&L/NS	*Carolina Power and Light Company v. Norfolk Southern Railway Company*, STB Docket No. 42072 (STB served December 23, 2003)
Duke/CSX	*Duke Energy Corp. v. CSX Transportation, Inc.*, STB Docket No. 42070 (served Feb. 4, 2004)
Duke/NS	*Duke Energy Corp. v. Norfolk Southern Ry. Co.*, STB Docket No. 42069 (served Nov. 6, 2003)
FMC	*FMC Wyoming Corp. v. Union Pacific R.R.*, STB Docket 42051 (served Sept. 13, 2001)
Interim Guidelines	*Coal Rate Guidelines, Nationwide*, Ex Parte No. 347 (Sub-No.1) (served Feb. 24, 1983)
AEP Texas	*AEP Texas North Co. v. The Burlington Northern and Santa Fe Ry. Co.*, STB Docket No. 41191 (Sub-No. 1) (served Mar. 19, 2004) (granting AEP Texas' Motion to Vacate)
Nevada Power	*Bituminous Coal – Hiawatha, Utah, to Moapa, Nevada*, 10 I.C.C.2d 259 (1994)
OPPD	*Omaha Power Dist. v. Burlington Northern R.R.*, 3 I.C.C.2d 123 (1986)
OPPD II	*Omaha Power Dist. v. Burlington Northern R.R.*, 3 I.C.C.2d 853 (1987)
PPL	*PPL Montana, LLC v. The Burlington Northern and Santa Fe Ry. Co.*, STB Docket No. 42054 (served Aug. 20, 2002)
PPL II	*PPL Montana, LLC v. The Burlington Northern and Santa Fe Ry. Co.*, STB Docket No. 42054 (served Mar. 21, 2003)
TMPA	*Texas Municipal Power Agency v. The Burlington Northern and Santa Fe Ry. Co.*, STB Docket No. 42056 (served Mar. 24, 2003)
TMPA II	*Texas Municipal Power Agency v. The Burlington Northern and Santa Fe Ry. Co.*, STB Docket No. 42056 (served Sept. 27, 2004)
WFA	*Western Fuels Association, Inc. and Basin Electric Power Cooperative, Inc. v. The Burlington Northern and Santa Fe Ry. Co.*, STB Docket 42088
WPL	*Wisconsin Power & Light Co. v. Union Pacific R.R.*, STB Docket No. 42051 (served Sept. 13, 2001)

CASE NAMES

Xcel	*Public Service Company of Colorado D/B/A Xcel Energy v. The Burlington Northern and Santa Fe Ry. Co.*, STB Docket No. 42057 (served June 7, 2004)
Xcel II	*Public Service Co. of Col. d/b/a Xcel Energy v. The Burlington Northern and Santa Fe Ry. Co.*, STB Docket No. 42057 (served Jan. 19, 2005)

I. COUNSEL'S ARGUMENT AND SUMMARY OF THE EVIDENCE

This is the Reply Evidence and Argument of defendant BNSF Railway Company ("BNSF") in STB Docket No. 42088, *Western Fuels Association, Inc. and Basin Electric Power Cooperative, Inc. v. BNSF Railway Company.* BNSF's Reply Evidence and Argument responds to the Opening Evidence of complainants Western Fuels Association ("WFA") and Basin Electric Power Cooperative, Inc. ("Basin") (collectively referred to as "WFA/Basin"), filed on April 19, 2005. The format of this Reply Evidence and Argument complies with the Board's instructions in STB Ex Part 347 (sub-No.3), *General Procedures for Presenting Evidence in Stand-Alone Rate Cases* (served March 12, 2001).

A. INTRODUCTION

WFA/Basin's Opening Evidence is full of strident rhetoric about "outrageously high tariff rates" that "shock the conscience." WFA/Basin Opening Nar. at I-4, 5. The rhetoric is out of touch with reality. The rates at issue are among BNSF's lowest rates on a dollar per ton basis for PRB coal transportation. Even with the rate increase that BNSF implemented when the old contract expired, Basin's Laramie River Station has electricity production costs that are substantially below average for the coal-fired plants in Basin's nine-state service area. BNSF Opening Exhibit II.C-3. This case is not about rates that are at "unheard of levels," WFA/Basin Opening Nar. at I-27, but rather about WFA/Basin's desire to preserve the financial windfall that resulted from their 20-year contract with BNSF that expired in 2004.

As BNSF explained on Opening, WFA and BNSF settled antitrust claims in the 1980s by entering into a 20-year transportation contract. BNSF Opening Nar. at II-24. The low rates under that contract allowed the Laramie River Station to become one of the nation's lowest cost producers of coal-fired electricity. BNSF Opening Exhibit II.C-2. Largely as a result of the highly favorable escalation clause in that contract, rates paid by WFA/Basin for coal transportation had fallen by 2004, when the contract expired, to unprecedented low levels. The low rates permitted WFA/Basin to rebate $140 million dollars to their members over five years. Basin openly boasted that "there is no doubt; we are in good times." BNSF Opening Nar. at II-27.

At the same time that WFA/Basin's rates were falling under the 20-year old contract, capacity was becoming extremely tight in the Powder River Basin ("PRB"). Demand for PRB coal, and the transportation of that coal, has reached record levels. Congestion is increasing in the PRB. Substantial new investments are needed in the PRB to meet growing demand. The confluence of these factors -- high and increasing demand for PRB transportation, the unique historical circumstances of the expiring contract, and WFA/Basin's clear ability to absorb a significant increase in rates -- led BNSF to increase the rates for the issue traffic service. *See* Brautovich V.S. at BNSF Reply Exhibit III.A-5. The new rates are a reasonable commercial response to existing market conditions.

Congress, the ICC and the Board have acknowledged that a railroad must have substantial freedom to set rates based on perceived demand for its service. What WFA/Basin disparagingly refer to as BNSF's "power of the pencil" -- the ability to set rates based on a railroad's perceived demand for the service -- is a right that Congress specifically gave to the railroads. Congress instructed the ICC and the Board "to allow, to the maximum extent possible, competition and the demand for services to establish reasonable rates for transportation by rail."[1] A fundamental principle underlying the *Guidelines* is that railroads must be permitted to engage in meaningful differential pricing if they are to have an opportunity to achieve revenue

[1] 49 U.S.C. §10101(1); *see also* §10101(2) (minimizing regulation of rail rates) and §10101(3) (promoting railroad revenue adequacy).

adequacy.[2] So long as the rates do not exceed a reasonable maximum rate as defined by the tests set out in the *Guidelines*, a railroad is free to set its rates in response to market forces in the manner that the railroad deems appropriate. The market, not the regulator, is supposed to be the primary force in establishing a railroad's rate structure.

BNSF has exercised that rate setting initiative here. The issue traffic rates take account of WFA/Basin's high and inelastic demand for the service while not exceeding maximum reasonable rates under the *Guidelines'* SAC constraint. WFA/Basin present a highly distorted SAC analysis in their Opening Evidence, in which they use cross-over traffic to create the appearance that BNSF -- a revenue inadequate railroad -- is substantially overcharging its PRB customers. WFA/Basin's claim that BNSF is charging its PRB shippers rates that are 40 to 45 percent too high is not credible.[3] WFA/Basin produce this implausible and erroneous result largely with two gaming strategies that are the central issues in this case.

First, WFA/Basin's SARR, the Laramie River Railroad ("LRR"), is dominated by short-haul cross-over traffic. The only traffic handled from origin to destination on the SARR is the issue traffic. The remaining traffic moves less than 70 miles on average on the SARR, with one-third of the traffic moving thirty miles or less on the SARR. WFA/Basin use the Board's MSP methodology, with a 100-mile origin credit, to allocate revenues to this short-haul cross-over traffic. This approach vastly overcompensates the LRR for handling this traffic and thus produces the appearance that rates on BNSF's PRB movements are too high. Complainants' gaming of the SAC test through the allocation of excessive revenues to short-haul cross-over

---

[2] *Guidelines*, 1 I.C.C.2d at 526. WFA/Basin's "Other Evidence" section of their Opening Narrative ignores the policy underlying the governing statute and regulatory standards.

[3] *See* WFA/Basin Opening Exhibit III-H-1.

traffic has reached a pinnacle in this case. BNSF therefore urges the Board to undertake a careful reexamination of its treatment of cross-over traffic in light of the economic principles that underlie the *Guidelines*. BNSF presents extensive economic testimony on this issue.

Second, WFA/Basin rely on an impermissible cross-subsidy from traffic that exclusively uses BNSF's lines north of Donkey Creek, Wyoming. WFA/Basin include in the LRR traffic group 47.3 tons of coal in year 2005 that originate at mines north of Donkey Creek and never touch the SARR facilities south of Donkey Creek. That traffic exits the SARR at Donkey Creek (for eastbound movements) or at Campbell (for westbound movements) after a very short haul on the LRR. But WFA/Basin improperly assume that the substantial revenues assumed to be generated by that traffic can be used to pay for facilities south of Donkey Creek that the traffic never uses. BNSF presents evidence showing how the Board can ensure that this northern traffic pays only for facilities that it uses.

When the distorting effects of these two gaming strategies are eliminated, and when modest changes are made in WFA/Basin's SAC cost calculations, the Board should find that SAC revenues do not exceed SAC costs. Therefore, the Board does not need to consider WFA/Basin's proposed new methodologies for prescribing rates. While BNSF addresses WFA/Basin's rate reduction proposals and explains why they are flawed and inconsistent with Ramsey pricing principles underlying the *Guidelines*, the Board does not need to reach the issue in this case because a proper SAC analysis shows that no rate reduction is warranted.

The principal SAC issues raised by WFA/Basin's Opening Evidence and BNSF's response to those issues are summarized below.

B. <u>TRAFFIC AND REVENUE</u>

The SARR at issue in this case, the LRR, is a carved-out segment of BNSF's lines in the PRB from the Eagle Butte mine in the north through Donkey Creek and Campbell, Wyoming, and south to Guernsey, Wyoming. The LRR has a short branch line extending from Wendover, Wyoming, to the Laramie River Station. The LRR is assumed to handle most, but not all, of the traffic that BNSF handles on these lines. All but the issue traffic in the LRR traffic group is handled by the LRR as cross-over traffic. The LRR is assumed to originate this cross-over traffic and hand it off to the residual BNSF at hypothetical interchanges at Donkey Creek, Campbell, Orin Junction, Guernsey and Moba Junction. WFA/Basin did not reroute any of the LRR traffic from its real-world route of movement.

As noted above, this case turns on the proper treatment of the short-haul cross-over traffic that dominates WFA/Basin's SAC presentation. WFA/Basin's heavy reliance on cross-over traffic requires that the Board step back and reassess its treatment of cross-over traffic in light of the basic principles underlying the SAC test. BNSF addresses this issue in detail in this Reply Evidence. In addition, BNSF explains that a few changes must be made to WFA/Basin's traffic and revenue escalation assumptions and to WFA/Basin's treatment of the issue traffic revenue. The principal traffic and revenue issues in this case are addressed briefly below.

1. Contestable Markets Theory Provides The Proper Framework For The Treatment Of Cross-Over Traffic In A SAC Analysis

The proper treatment of cross-over traffic in a SAC analysis has become the central issue in recent SAC litigation. The assumptions relating to cross-over traffic used in the SAC calculation drive the results of the SAC analysis. Recent SAC cases have not been about the reasonableness of BNSF's rates but about the rules to apply in the face of complainants' increasing reliance on cross-over traffic. One set of rules produces results indicating that the challenged rates are reasonable, while another set of rules produces the opposite results. The use of cross-over traffic therefore presents numerous gaming opportunities for complainants and enormous risks that the SAC analysis will produce results that are not justified. Credible SAC results require that the Board adopt a principled treatment of cross-over traffic that is consistent with the economics underlying the *Guidelines*. However, the Board has yet to identify a conceptual framework for treating cross-over traffic.

BNSF's witness, Professor Joseph P. Kalt, Ford Foundation Professor of International Political Economy at the John F. Kennedy School of Government, Harvard University, presents a coherent framework for evaluating the use of cross-over traffic in a SAC case that resolves the two most difficult issues that the Board has been forced to address in cases dominated by the use of cross-over traffic -- the determination of revenues on cross-over traffic and the methodology for reducing rates found to be unreasonably high. The framework described by Professor Kalt is based on the principles of differential pricing and contestable markets theory that the SAC test is supposed to implement. His testimony is set out in BNSF Reply Exhibit III.A-1 and is incorporated in BNSF's Reply Narrative.

Professor Kalt first explains that the distortions potentially created by cross-over traffic make it critically important to find an economically rational way of dealing with cross-over traffic. BNSF illustrates the distortions that can result from cross-over traffic with two examples. First, BNSF shows that the use of cross-over traffic can produce widely varying results depending simply on how much of the existing through movement is replicated by the SARR. Using WFA/Basin's SAC assumptions, BNSF shows that a simple extension of the LRR to include a larger portion of the residual BNSF's lines used to serve the LRR traffic produces dramatic changes in the SAC results. BNSF Reply Exhibit III.A.4. As the LRR is extended, the apparent overcharges that BNSF is receiving from the shipper group decline substantially as the costs of the offline portions of the through movements are considered.[4] Second, BNSF extends WFA/Basin's Table III-H-2 to show that WFA/Basin's own SAC assumptions would, if accepted, prove that a rate of $0.00/per ton for the issue traffic movement would be considered too high. BNSF Reply Exhibit III.A-3. WFA/Basin's unprincipled approach to cross-over traffic produces illogical and totally unreliable results.

The problem with cross-over traffic, as Professor Kalt explains, is that there is no non-arbitrary way of allocating through revenue between segments of a through movement. Nevertheless, Professor Kalt concludes that cross-over traffic can be used in a SAC analysis if it is treated in a manner consistent with the economics of contestability. Contestability logic indicates that a SARR could choose to enter the market for only part of a through movement (or a group of through movements), but that choice of partial entry has two implications.

First, it is appropriate to assume that the complainant sponsoring the SARR must have determined that there is no additional contribution to be gained from building all of the facilities needed to handle the cross-over traffic, otherwise the SARR would have decided to build a more extensive network to capture that contribution.

Second, the contest between the SARR and the residual incumbent for the cross-over portion of through movements will logically be resolved by the efficient SARR capturing the traffic at a rate equal to the residual incumbent's avoidable cost for the cross-over segment of the movement. Since there are no real-world rates on cross-over movements to be tested for reasonableness, the only rational basis for assigning revenues to cross-over movements is to look

[4] BNSF's showing is based on WFA/Basin's MSP revenue allocation methodology using 100-mile origin credits. The distortions created by building out are reduced (but not eliminated) when a 25-mile block credit is used, suggesting that a 25-mile origination credit is a better proxy for origination costs than the 100-mile credit used by WFA. *See* BNSF Reply electronic workpaper "LRR adjacent segments.xls."

to the outcome of the contest, while recognizing that cross-over revenues will not be reduced to pay for a collective overcharge.

These simple assumptions based on contestability logic point to the proper resolution of both the assignment of revenue on cross-over traffic and the approach to a rate reduction in this case -- where the only through movement is the issue traffic movement -- if one is required. On the first question relating to the revenues on the cross-over traffic, those revenues should be set at the residual incumbent's avoided costs to reflect the outcome of the contest in which the SARR successfully enters the market for a portion of the through movement. Professor Kalt explains that in this case, the residual incumbent's avoided costs are properly measured by the Board's URCS costs. Since WFA/Basin assume that the residual incumbent continues to serve shippers located on the lines replicated by the LRR, the residual incumbent's avoided costs in this case are the total variable URCS costs, including investment costs, attributable to the cross-over traffic. *See* BNSF Reply Nar. at Sections III.A.3.c.(iv).(b). LRR revenues calculated using this approach are set out at BNSF Reply Table III.A-9.

If cross-over revenues are calculated using the residual incumbent's avoided costs, then the second question relating to the rate reduction methodology is also easily resolved. As Professor Kalt explains, when cross-over revenues are determined in accordance with contestability principles, no further reduction in those revenues would be appropriate even if total SAC revenues are found to exceed total SAC costs. Under those circumstances, any reduction in revenues should be made only on revenues generated on through movements included in the SARR's traffic group and handled by the SARR at the defendant carrier's actual rates on those movements. The only through movement in this case is the issue traffic. Thus, if revenues are properly determined for the cross-over traffic using contestability principles, any reduction in rates would be taken entirely from the issue traffic.

Professor Kalt acknowledges that the ICC rejected a similar approach to the determination of cross-over revenue in the *Nevada Power* case. However, BNSF urges the Board to take a fresh look at the issue here. When the ICC addressed the complainant's use of cross-over traffic in that case, it did not foresee the extent to which cross-over traffic would be used to game the results of the SAC analysis in future cases. The ICC also appeared to misunderstand the effect of using URCS to identify the SARR's revenue, noting a concern over the "minimal contribution" that URCS would make to joint and common costs.[5] In fact, on high-density lines such as those at issue here, URCS provides for a substantial cost recovery of below-the-wheel investment. Most important, an approach to the treatment of cross-over traffic that refers expressly to contestability theory provides a principled and unified framework for resolving both the proper assessment of revenues on cross-over traffic and the proper approach to determining the level of a prescribed rate if the challenged rates are determined to be unreasonably high.

2. <u>If The Board Uses MSP To Allocate Revenues On Cross-Over Traffic, It Must Correct The Origin Credit To Eliminate Gaming On Short-Haul Traffic</u>

A fundamental problem with the Board's MSP approach is that it assumes that the incumbent's through revenues can be divided into revenues for distinct portions of a through movement. This assumption is contrary to the longstanding rule that a through rate cannot be

[5] *Nevada Power*, 10 I.C.C.2d at 266.

divided into segment-specific factors.[6] The approach that Professor Kalt urges the Board to adopt in this case avoids this problem by determining the revenues on the cross-over portion of a movement by reference to the outcome of the contest between the SARR and the residual incumbent for that portion of the movement. BNSF's proposal does not require that the Board arbitrarily allocate through revenue between segments of a through movement.

WFA/Basin nevertheless use the MSP methodology to determine revenues on the cross-over movements, and the Board has used the MSP approach in several recent cases. The MSP approach seeks to allocate through revenue based on the incumbent's costs for each segment of the through movement. If the Board declines to adopt BNSF's contestability-based approach and continues to use the MSP methodology, it must at least ensure that the assessment of relative costs on each line segment is accurate.

The Board has previously rejected BNSF's attempts to estimate the costs of each section of a through movement based in part on the relative densities of each line segment. MSP totally ignores the effect of density on costs. The Board's rejection of an approach that considers density is the subject of the pending appeal in the *Xcel* case and BNSF does not address it further in this Reply Narrative. But the MSP approach has another flaw related to the origin block credit. The use of a 100-mile origin credit in the MSP methodology overstates dramatically the costs to originate unit coal trains in the PRB and therefore distorts the assessment of relative costs of on-SARR and off-SARR portions of a through movement and, by extension, the allocation of the through revenues that is based on that relative cost assessment. The distortions are the greatest on short-haul traffic, where the origin credit constitutes a large percentage of the

---

[6] *See Central Power & Light Co. v. Southern Pac. Transp. Co.*, 1 S.T.B. 1059, 1064, 1067 and 1073-4 (1996) *clarified, Central Power & Light Co. v. Southern Pac. Transp. Co.*, 2 S.T.B. 235, 237-9 (1997).

total revenues allocated to the originating railroad. As BNSF explains, more than one-third of all traffic on the LRR travels no more than 30 miles on-SARR. This very short-haul traffic averages 16 miles, less than 10 percent of the total LRR network constructed to provide the issue traffic service. For this traffic, *86 percent* of the cross-over revenue allocated to the SARR is attributable only to the origin credit. The use of a 100-mile credit gives complainants a strong incentive to game the SAC analysis by loading up the SARR with short-haul traffic.

BNSF demonstrates in Section III.A.3.c.(v) that the Board's own URCS methodology proves that a 100-mile origin credit overstates the costs to originate unit coal trains. URCS assumes that the costs to originate unit train carloads in shipper-owned cars is about 25 percent of the cost to originate the system-average carload, thus justifying only a 25-mile origin credit. Use of a 25-mile origin credit is further supported by a movement-specific analysis of the variable costs for the issue traffic movement, which shows that the variable origination costs are the equivalent of about 21-23 miles of variable line-haul costs. Finally, BNSF shows that WFA/Basin's own SAC evidence demonstrates that the use of a 100-mile origin credit vastly overcompensates the SARR for the relative costs of originating unit coal trains. In short, there is no evidence in the record indicating that a 100-mile origin block credit accurately reflects the costs to originate unit coal trains in the PRB, and there is abundant evidence that a 100-mile origin block credit substantially overstates those costs.[7]

WFA/Basin do not even attempt to justify the 100-mile origin block credit as an accurate measure of origination costs, but rather they argue that the 100-mile credit is appropriate as a rough measure of how real-world divisions would be set. *See* WFA/Basin Opening Exhibits III-

---

[7] SAC revenues calculated using the 25-mile origin block credit are set forth in BNSF Reply electronic workpaper "LRR Traffic and Revenues_WFABasinOpening_BNSF Revised MSP.xls."

A-3 and III-A-4. But the Board has indicated that real-world divisions are not relevant to allocations of through revenues between the SARR and the residual incumbent on cross-over movements.[8] Professor Kalt explains why the Board properly concluded that real-world divisions would be irrelevant to the question of cross-over revenues. BNSF Reply Nar. at Section III.A.3.c.(iii). The MSP revenue allocation standard is based on relative costs and WFA/Basin have submitted no cost evidence supporting the revenue allocation methodology that they have sponsored here.[9]

3. Revenues Generated By Cross-Over Traffic Using Only The SARR's Northern Lines Should Not Be Used To Pay For The SARR's Southern Lines

The Board has expressly stated that non-issue traffic may not be used to cross-subsidize the issue traffic rate because cross-subsidization is "inconsistent with CMP principles."[10] Thus, "revenues from non-issue traffic should not be relied upon to pay for portions of a SAC system over which that non-issue traffic would not move."[11] WFA/Basin nevertheless rely on an impermissible cross-subsidy by using revenues from the very short-haul traffic in the SARR network that uses only the LRR's rail lines north of Donkey Creek to pay for facilities south of Donkey Creek used by the issue traffic. Specifically, WFA/Basin include substantial volumes of

---

[8] *See Duke/NS*, slip op. at 20 n. 29.

[9] WFA/Basin rely heavily on WRPI's supposed revenue divisions. But WFA/Basin acknowledge that they have no supporting data for these divisions. In any event, WRPI's relationship with its interline carrier was not an arms-length relationship, so even if its divisions were known (and relevant to the calculation of cross-over revenues), WRPI's experience would have no significance.

[10] *PPL*, slip op. at 8.

[11] *PPL*, slip op. at 9 (quoting *Arizona Electric Power Coop. v. BNSF*, STB Docket No. 42058, slip op. at 6 (served Dec. 31, 2001) (emphasis added).

coal that originate at mines north of Campbell and exit the LRR at Donkey Creek (for eastbound movements) or at Campbell (for westbound movements). This traffic travels on the LRR for only between 11 miles to 13 miles and, yet, is assumed by WFA/Basin to contribute $55.6 million in revenues to the LRR in 2005 alone. The inclusion of such substantial revenues associated with traffic that does not use the facilities of the LRR south of Donkey Creek makes it virtually certain that those revenues are being used to subsidize the LRR facilities south of Donkey Creek.

BNSF has identified a relatively simple approach that will ensure that this northern traffic will not pay for any facilities south of Donkey Creek. Specifically, BNSF has removed from the SARR revenue calculations all revenues associated with the traffic originating from the northern PRB mines that exits the LRR at either Donkey Creek or Campbell. BNSF also eliminates from the SAC analysis all costs associated with this traffic. Specifically, BNSF has removed from the SAC cost calculations all operating costs for the short haul traffic originating north of Donkey Creek using the Board's approach to identifying direct and indirect operating expenses in *PPL,* with some slight modifications relating to indirect operating expenses. BNSF has also removed from the SAC cost calculations the construction costs for all facilities north of Donkey Creek. This effectively allows the issue traffic and other traffic that originates north of Donkey Creek and moves south of Donkey Creek to use the north-of-Donkey Creek facilities without contributing to their cost. In this way, the short-haul traffic originating north of Donkey Creek is prevented from contributing revenues to offset the costs of facilities that the short-haul traffic does not use.

4. Modest Changes Should Be Made To WFA's Traffic And Revenue Escalation Assumptions.

BNSF also made a few modest changes to WFA/Basin's traffic and revenue escalation assumptions. Rather than using the published EIA forecast relied upon by WFA/Basin, BNSF substituted its own internal forecast of projected coal volumes prepared by BNSF in the ordinary course of business for the years 2006 through 2009, the years the forecast is available. BNSF's change is consistent with existing Board precedent.[12] BNSF also corrects a few errors made by WFA/Basin in calculating volumes to three specific plants in the traffic group.

With respect to revenue projections, BNSF's approach differs depending upon the methodology used to calculate the LRR's revenues for cross-over traffic. Under the avoidable cost methodology urged by BNSF, BNSF adjusts the URCS costs on an annual basis by the RCAF-A. Forecast of the RCAF-A is appropriate because the cross-over revenues are based on the incumbent's avoided costs, and those costs are affected by the productivity that the incumbent can expect to experience. Under the MSP methodology with 25-mile blocks for originating/terminating traffic, BNSF uses the same revenue projection methodology as WFA/Basin with two exceptions -- (1) BNSF uses its own internal forecast for projecting revenues in 2006 through 2009 rather than the EIA forecast used by WFA/Basin and (2) BNSF uses a somewhat different forecast of fuel surcharge revenues in projecting revenues for contract movements and common carrier rates that incorporate a fuel surcharge.

5. Revenues Contributed By The Issue Traffic Must Reflect The Rates That BNSF Established For The Issue Traffic Movement

WFA/Basin argue that the Board should disregard the rates that BNSF actually established and carry out the SAC analysis based on fictional rates other than those in the

[12] *See WPL*, slip op. at 106.

common carrier rate authority that is the subject of the complaint. The statute gives the railroad rate setting initiative (49 U.S.C. § 10701(c)) and it gives the Board jurisdiction to review the rates that have been set (49 U.S.C. § 10702). The Board cannot disregard the structure of the rates at issue just because WFA/Basin claim that the rates are excessive -- the very question that is at issue in the case -- or that the rate structure is "convoluted." WFA/Basin Opening Nar. at III-A-11.

BNSF's witness Mr. Brautovich, BNSF Assistant Vice President of Coal Marketing West, explains that the issue traffic rates have been established to reflect the specific circumstances of the issue traffic and current market conditions. First, BNSF established three rates corresponding to different PRB regions -- northern, central and southern PRB mines. BNSF established these regional rates to reflect the characteristics of the movements, such as the fact that the relative distance of the movements from the northern PRB mines is substantially longer than that for movements from the southern PRB mines. BNSF also charged a higher rate from northern PRB mines due to the fact that it imposes an additional cost on BNSF to run trains from northern PRB mines through the southern PRB mine region. Second, while BNSF concluded that the rates it established for 2007 were commercially reasonable, it decided to phase in those common carrier rates in three steps to avoid dislocations to WFA/Basin. Third, BNSF included in the common carrier pricing authority a fuel surcharge to reflect the unpredictability of fuel prices in today's market. This fuel surcharge is intended to allow BNSF to recover its fuel costs given the extreme volatility of the price of fuel and the fact that the indexes with fuel components have not been adequate to address this volatility.

The Board has no basis for disregarding the rates that BNSF established for the issue traffic in determining whether those rates exceed reasonable maximum rates. BNSF has revised the revenue assumptions in the SAC analysis to include the revenues that BNSF expects to receive under the challenged rates.

C. SARR CAPACITY AND OPERATING PLAN

WFA/Basin based their assessment of the SARR's capacity and their derivation of operating statistics on the output of the Rail Traffic Controller ("RTC") model. BNSF's operating experts, Mssrs. Mueller, Wheeler and Plum carefully reviewed WFA/Basin's use of the RTC model and identified three principal areas in which WFA/Basin failed to reflect in their modeling assumptions real-world operating constraints that a SARR would experience.

First, WFA/Basin failed to incorporate in their RTC analysis the effect of all maintenance outages that a SARR operating a heavy-haul, high-density unit coal train railroad would experience. Unlike prior complainants, WFA/Basin did include several maintenance outages in their RTC analysis using BNSF's real world experience on the same lines replicated by the SARR. Moreover, the basic approach used by WFA/Basin to identify maintenance outages that the SARR would experience was appropriate. However, for reasons that are never explained, WFA/Basin either overlooked or ignored several outages that BNSF experienced on the lines at issue even though WFA/Basin included other outages of the same type. BNSF included the missing outages in its RTC analysis.

Second, WFA/Basin overstated the operational train capacity of 11 of the PRB mines to be served by the LRR. The overstatement occurred because WFA/Basin inappropriately equated the maximum number of unit coal trains that the track configuration of each of the mines can physically hold, as stated in the BNSF Guide to Coal Mines, with the operational train capacity to those mines. "Operational" capacity reflects the capacity of each mine to accommodate unit coal trains while maintaining efficient loading operations. "Operational" train capacity is usually lower than "physical" train capacity because holding trains on all available trackage of the mine usually will impede the flow of trains through loading operations. BNSF's expert, Mr. Mueller, prepared an assessment of the operational train capacity of the mines served by the LRR. *See* Section III.B.2.a.(2).(b). Modified capacity assumptions were used in BNSF's alternative RTC analysis.

Third, WFA/Basin failed to account for the presence of any UP trains at the mines, as well as a few residual BNSF trains. WFA/Basin argue that they can ignore UP trains because they included a cushion of time in their assumed loading times sufficient to account for any delays caused by the presence of UP trains at the mines. As BNSF explains, the loading time assumed by WFA/Basin is adequate only to address the time spent loading trains and it does not account for any time that would be incurred waiting for a slot to become available. A proper model of PRB capacity must take account of the physical limits on the number of trains that can be accommodated on mine tracks waiting to be loaded. *See* Section III.B.2.a.(2).(a).

BNSF's witness Mr. Wheeler modified WFA/Basin's RTC model to reflect these real world operating constraints.[13] He then ran the RTC model using a slightly modified train list that corrected a few minor errors in WFA/Basin's train list.[14] *See* Section III.B.2.a.(2).(g). The RTC model ran to completion and Mr. Wheeler therefore concluded that the SARR's capacity

[13] BNSF made a few additional minor changes to the model that are described at Sections III.B.2.a.(2).(d) through (i).

[14] In addition, the train list provided to Mr. Wheeler reflected the slightly smaller peak year tons that resulted from BNSF's modified escalation assumptions. *See* Section III.B.2.a.(2).(g).

was adequate to handle the traffic group. Therefore, BNSF has accepted WFA/Basin's mainline and yard capacity assumptions without any changes.[15]

To develop time-based operating statistics (largely for purposes of determining equipment ownership cost), BNSF started with the revised transit times produced by BNSF's RTC analysis. Mr. Mueller identified a few areas where the yard time needed to be increased to reflect activities performed in the yards. These revised transit times were provided to BNSF's witness Mr. Plum, who used them to develop modified locomotive and car ownership requirements. *See* Section III.C.1.c.(2) and (3).

BNSF explains in Section III.C.1.c.(3) that WFA/Basins' approach to determining road locomotive requirements for the LRR is flawed. Based upon errors in their application of the methodology approved by the Board in *Xcel II*, WFA/Basin asserted that no peaking factor was required for the termination of road locomotive requirements in this case. BNSF corrected those errors and calculated the appropriate peaking factor for road locomotives in accordance with the *Xcel II* methodology. BNSF then calculated the LRR's road locomotive requirements using the transit times generated by its RTC Model simulation. BNSF found that a modest increase in locomotives was required. *See* BNSF Reply Table III.C-4.

D. OPERATING COSTS

WFA/Basin understated the costs to operate the LRR in several ways. BNSF explains in detail in Section III.D of the Reply Narrative the corrections it has made to WFA/Basin's calculations. Four issues merit attention in this Summary.

---

[15] Slight changes were made to route and track miles to correct assumptions relating to mine lead tracks, setout tracks and tracks at the locomotive shop. *See* BNSF Reply Nar. at Sections III.B.1 and III.B.2.

Fuel: WFA/Basin substantially understated the LRR's cost of fuel by ignoring the actual fuel prices paid by BNSF to obtain fuel at the locations where the LRR would fuel its trains and by ignoring the higher fuel consumption rates on heavy unit coal trains. On the question of fuel price, BNSF produced in discovery data on the actual price it pays for fuel at various locations on the lines replicated by the LRR where BNSF purchases fuel today. As a result of various factors, BNSF pays more for fuel at these locations than it pays on average for fuel across the BNSF system. Given the extreme importance of fuel in a railroad's overall costs, BNSF expends substantial efforts to obtain the best fuel price possible at all of the fueling stations on BNSF's lines. WFA/Basin have identified no inefficiency in BNSF's fuel acquisition practices. WFA/Basin cannot plausibly claim that their hypothetical LRR would obtain better fuel prices than BNSF.

Nevertheless, WFA/Basin claim that the LRR's supposedly enhanced demand for fuel would change the supply arrangements in the PRB and magically produce lower fuel prices. There is no reason to entertain WFA/Basin's fanciful speculations since the LRR would essentially replace BNSF's existing fuel demand. Moreover, BNSF shows that the fuel refineries that would supposedly supply the LRR with low-price fuel are currently charging prices significantly above BNSF's system-average fuel price and above the price BNSF pays today for fuel at Guernsey. BNSF uses in its operating cost calculations the actual BNSF fuel price at the locations where the LRR would obtain fuel.

On the question of fuel consumption, BNSF has demonstrated in recent cases that heavy unit coal trains operating in the PRB consume fuel at a rate that significantly exceeds its system-average fuel consumption rate. In fact, BNSF's evidence in those cases was based on fuel consumption studies that BNSF carried out with the participation of complainants, who originally requested the fuel consumption studies. BNSF's evidence has been accepted by the Board.[16]

As BNSF explained on Opening, BNSF recently implemented a program to monitor fuel consumption on BNSF trains. That program involves collection of event recorder data and the analysis of that data using models and assumptions very similar to those used in the fuel studies conducted in the recent SAC cases. *See* BNSF Opening Nar. at II-12 to 15. To determine fuel consumption on LRR trains, BNSF's witness Mr. Bues evaluated BNSF's real-world fuel consumption data for trains that are comparable to LRR trains and determined an average fuel consumption rate. BNSF used that consumption rate to determine the fuel used on LRR trains. BNSF Reply Nar. at Section III.D.1.d.(3).

Crew: BNSF accepts the basic methodology used by WFA/Basin to determine the LRR's road crew requirements as well as WFA/Basin's assumption that these road crew would work 270 shifts per year. BNSF continues to object to such an aggressive assumption as unrealistic and unsupported by any real-world experience. Such a high utilization of road crew would put strains on the workforce that could not be sustained over the long term. Nevertheless, the Board has repeatedly accepted this assumption in SAC cases, so BNSF uses it here.

However, if the LRR would impose such a high burden on its road crew personnel, it could not expect to pay those crew personnel the average wage that BNSF pays to crew that work substantially less than the LRR crew, nor could the LRR avoid paying certain constructive allowances that BNSF pays to its employees. The extremely high crew utilization rates that the LRR assumes would be offset at least in part by higher average wages. BNSF has corrected WFA/Basin's crew salary calculations to reflect the compensation BNSF pays to employees that

[16] *TMPA*, slip op. at 58, 82; *Xcel*, slip op. at 60, 137-8.

work at a level comparable to that assumed by WFA/Basin for their LRR workforce. BNSF Reply Nar. at Section III.D.3.a.(2).(b).

G&A: WFA/Basin have not presented a single concrete proposal for managing the LRR that would represent a change from existing railroad management practices for large-scale rail operations. Yet WFA/Basin assume that the LRR would achieve G&A costs that are totally unprecedented. BNSF Reply Nar. at Section III.D.3.c. The Board cannot accept costs that represent a complete departure from real world experience based on little more than vague assurances that the SARR would be more efficient. BNSF's G&A costs are more firmly grounded on real world experience and they should be used in this case.

MOW: The LRR is a short, high-density railroad handling exclusively heavy-haul unit coal trains. The MOW needs of the LRR would be extraordinary. The LRR could not expect to provide adequate service over rail lines that are not maintained to demanding standards. The LRR would need a dedicated, highly trained, and adequately equipped workforce to maintain the lines. To avoid service interruptions, a large MOW workforce would be needed.

WFA/Basin avoided some of the shell games that prior complainants have played, such as extensive use of outside contractors, in describing an MOW plan for the LRR. Unlike prior complainants, WFA/Basin have assumed that a large percentage of spot MOW work would be performed by in-house personnel, thus allowing a more careful assessment of the adequacy of the MOW workforce and the MOW costs. However, as BNSF explains in Section III.D.4.a of the Narrative, a review of WFA/Basin's MOW assumptions shows that WFA/Basin have grossly understated the LRR's maintenance requirements and underestimated the size of an MOW workforce that would be needed to maintain the operations of the LRR.

To illustrate the extent of WFA/Basin's understatement of the LRR's MOW needs, BNSF compared the number of MOW workers assumed by WFA/Basin to the number of BNSF's MOW workers that maintain the same line segments that the LRR replicates. While BNSF's MOW workers maintain a larger number of track miles, a comparison can be made on a track-mile basis. It is clear that WFA/Basin's MOW employees per track-mile substantially understates the real-world experience. BNSF Reply Nar. at Section III.D.4.a; Table III.D.4-1. WFA/Basin point to no plausible reason to assume that the LRR could provide the same level of service as the incumbent using substantially fewer MOW resources. BNSF did a careful ground-up analysis to determine the size of a workforce that would be needed by the LRR. BNSF Reply Nar. at Section III.D.4.i.(1).

WFA/Basin's understatement of MOW personnel accounts for a large part of the shortfall in MOW costs assumed by WFA/Basin for the LRR, but other factors contribute to the flaws in WFA/Basin's MOW costs assumptions. Those issues are addressed in detail in the Reply Narrative. To illustrate the extent by which WFA/Basin understated MOW costs, BNSF compared WFA/Basin's cost assumptions to the actual MOW costs for the Joint Line. Forty-five percent of the LRR consists of the Joint Line, so the real-world costs on that line provide a valuable benchmark for assessing the reasonableness of WFA/Basin's assumptions. As BNSF demonstrates, on a mainline track-mile basis, the Joint Line costs exceed WFA/Basin's MOW costs per track-mile by 64 percent.

E. CONSTRUCTION COSTS

BNSF produced in discovery a large volume of materials relating to current and recent construction activities on BNSF's rail network. Those materials included extensive backup on individual construction issues and supporting files. WFA/Basin cherry picked from those materials to produce a cost estimate for their SARR that is not realistic or consistent with real world experience. WFA/Basin's construction cost estimate does not comport with the feasibility standard in the *Guidelines*. While WFA/Basin purport to rely on BNSF's real world construction data, WFA/Basin's estimate is totally out of line with BNSF's experience and the costs that BNSF incurs to construct or expand rail lines today.

BNSF asked its Assistant Vice President of Engineering Services, Mr. Robert J. Boileau, to provide a real-world perspective on the costs incurred for significant rail construction today. Mr. Boileau's analysis begins with a description of the actual costs that BNSF incurred in constructing and upgrading the Orin Line and the costs for a recent project in the same area. *See* BNSF Reply Nar. at Section III.F Introduction. A large portion of the LRR replicates Orin Line segments, so BNSF's experience on the Orin Line is particularly relevant in this case. As Mr. Boileau explains, BNSF expects that any attempt to replicate the Orin Line or any major portion of it would cost at least $2.5 million per track mile. These costs do not involve any significant entry barrier costs that might affect their comparability to SAC cost estimates. Any cost estimate that falls significantly short of this real-world benchmark would be flawed and would not produce a realistic estimate that could reasonably be used in a SAC analysis. WFA/Basin's cost estimate falls far short of this real-world benchmark. *See* BNSF Reply Charts III.F-1 and 2.

Mr. Boileau explains that there are several basic problems underlying WFA/Basin's cost estimate here, and the estimates that have been presented by complainants in the past, that tend to produce unrealistic and distorted costs. First, and most important, complainants develop bottom-up cost estimates by identifying the supposed lowest possible cost for a multitude of individual cost items. They then aggregate those low-cost assumptions to produce a total cost estimate. But complainants never step back and ask whether the result reflects a realistic *total* cost for a feasible railroad. The Board has not required complainants to do this real-world test in the past, which has encouraged complainants to continue using this bottom-up approach to produce unrealistic cost estimates. The distortions that result from this approach are evident from the fact that the Board's cost estimates in SAC cases consistently fall short of the $2.5 million per track mile that BNSF incurs to build rail lines for PRB traffic in the real world.

The use of a cost estimation methodology that relies on the aggregation of multiple low cost estimates encourages complainants to cherry pick. As Mr. Boileau explains, contractors are not as concerned about the allocation of costs among the individual costs in a project as they are about the total costs of the project. Often, contractors will identify low costs for one item and make up for those costs elsewhere. The fact that a contractor identifies a low cost for one item in a bid does not mean that the cost would be available in isolation from the total project. Mr. Boileau provides several detailed examples showing how cherry picking from multiple sources can produce highly distorted cost estimates. *See* BNSF Reply Nar. at III.F-16 to 21.

The Board must address this concern by giving teeth to the complainant's burden of proof in SAC cases. The Board has turned the burden of proof on its head in recent cases by accepting complainants' low cost estimates if there is any basis (even, in many cases, an erroneous basis) for accepting it. For example, BNSF has repeatedly urged the Board to reconsider its acceptance of complainants' assumption that secondary rock blasting can be avoided[17] or complainants' use of unrepresentative subballast cost assumptions.[18] When the complainant is given the benefit of the doubt on multiple cost items -- contrary to the legal requirement that the complainant has the

---

[17] *See* BNSF (Xcel) 4/4/2003 Reply Nar. at III.F-62 to 66: BNSF (AEP Texas) 5/24/2004 Reply Nar. at III.F-44 to 46.

[18] *See* BNSF (Xcel) 4/4/2003 Reply Nar. at III.F-95 to 97: BNSF (AEP Texas) 5/24/2004 Reply Nar. at III.F-95 to 98.

burden of proof -- the distorting effect of low estimates on individual items is accumulated and magnified. The result is an estimate at the end of the process that bears no resemblance at all to a realistic estimate for a feasible SARR.

Mr. Boileau also explains that SAC cost estimates are distorted by complainants' use of standards and materials that may be appropriate for some rail lines but that are not appropriate for high-density PRB rail lines. A realistic cost estimate is not obtained by referring to materials used on lines that are not designed for PRB traffic or by using historical construction standards that have been abandoned by BNSF in favor of standards that are more appropriate for the traffic that will be handled by the SARR.

BNSF's construction cost witnesses, Ms. Gouger and Messrs. Primm and Tesh, also carried out a detailed review of the specific cost assumptions in WFA/Basin's Opening Evidence and modified those costs to produce a more realistic estimate of the cost to construct the SARR. The issues are too numerous to summarize here but they are described in detail in the Narrative. When the evidence is properly evaluated, the Board should find that BNSF's evidence is the best evidence of record and it should be used in the SAC analysis.

F. DISCOUNTED CASH FLOW MODEL ISSUES

As discussed in Section III.G.2.(a), a key point of contention between complainants and defendant railroads continues to be how operating costs should be indexed within the DCF analysis to account for inflation. WFA/Basin contend, as have other complainants, that they are entitled to the use of an index that reflects supposed increases in productivity that would be experienced by the SARR from the first day of the SARR's operations. WFA/Basin apparently accept that using the RCAF-A for this purpose, an approach that the Board has repeatedly rejected, would overstate the productivity gains a SARR could expect. Instead, WFA/Basin propose that the Board should use a new index calculated by WFA/Basin and referred to as the

0.53 RCAF-U index. WFA/Basin continue to assert, however, that productivity should be reflected from the start of the SARR's operations.

WFA/Basin do not submit any evidence concerning why this new index appropriately captures productivity gains that a SARR could be expected to achieve, nor do they explain why a SARR -- which is already far more efficient than incumbent railroads due to the SAC assumptions of an optimally configured, most efficient railroad -- would be able achieve productivity gains as soon as operations commenced. WFA/Basin's argument appears to boil down to the proposition that some unquantified productivity gains can be expected for a SARR, it is therefore common sense for the Board to adopt some new inflation index, and the 0.53 RCAF-U is the appropriate index because it "splits the difference" between the positions advocated by complainants and BNSF.

WFA/Basin make no effort to quantify the productivity gains a SARR might expect to obtain and they do not tie their proposed index to any measure of such gains. WFA/Basin do include a laundry list of speculative potential sources of productivity improvements in their evidence, but they never tie these sources of productivity to the new index they advocate. Moreover, the examples WFA/Basin cite all share two common characteristics: (1) any productivity gains would only be realized at some point years in the future (not from day one); and (2) WFA/Basin have completely ignored the costs that a SARR would need to incur to achieve those productivity gains.

In contrast to the extremely aggressive position adopted by WFA/Basin, BNSF has responded to the Board's concern that a SARR may realize some productivity gains over the DCF period by carefully evaluating the potential sources of productivity gains and developing an approach that captures the productivity gains a SARR might reasonably expect to achieve.

BNSF's approach applies the RCAF-A, beginning in year 11, to selected cost categories where productivity gains are possible. This approach is tailored to the productivity gains that can be expected and the likely timing of such productivity gains.

G. RESULTS OF SAC ANALYSIS

BNSF's evidence demonstrates that when the DCF analysis is performed with appropriate adjustments to the LRR's operating costs and revenues for cross-over traffic derived from contestability theory, and when the effect of the cross-over subsidy from the short-haul northern PRB traffic is eliminated, the result is a SARR that cannot cover its costs. *See* BNSF Reply Exhibit III.H-1. The same result obtains if revenues for cross-over traffic are calculated using the Board's MSP methodology, but substituting a 25-mile block for the 100-mile block used as an origination and termination credit. *See* BNSF Reply Exhibit III.H-2. As a result, the Board should not need to reach issues concerning what rate to prescribe or how to calculate the appropriate reduction in current rates.

BNSF's evidence nevertheless addresses the question of rate reduction methodologies, as the proper rate reduction methodology is directly linked to the proper treatment of revenues on cross-over traffic. As BNSF's witness Professor Kalt explains in BNSF Reply Exhibit III.A-1 and Narrative Section III.H.2, if the Board were to adopt an approach that adheres to contestability theory, there would be no need to use any rate reduction methodology to determine the maximum reasonable rate for the issue traffic. Instead, the amount by which rates for the issue traffic would need to be reduced would flow from the same analysis that determines revenues available to the SARR from cross-over traffic. In the case of a SARR like the LRR, where only the issue traffic is local, the contestability approach identifies the total revenues that can be obtained from cross-over traffic, and any other revenues necessary to cover the costs of the SARR must be derived from the issue traffic. If revenues from the issue traffic at present rates exceed SARR costs that are not covered by cross-over revenues, then the complainant is entitled to a rate reduction equal to the excess. Reference to contestability theory therefore provides a principled and consistent basis for resolving the two most difficult issues that have arisen in recent cases where cross-over traffic has been predominant in the SARR traffic group.

If the Board declines to adopt the contestability approach, and instead adheres to a cost-based mechanism for determining cross-over revenues based on an allocation of through revenues to two segments of a through movement, the appropriate approach to calculating prescribed rates would be to continue to use the percent reduction methodology. The Board has emphasized that a key advantage of the percent reduction methodology is that it preserves the existing rate structure and the differential pricing that the existing rate structure reflects. The Board's current approach, however, which applies the percent reduction to only the SARR portion of cross-over revenues, does not, in fact, accomplish this purpose. Instead, the Board's current approach reduces through rates for traffic that is local to the SARR by a proportionally greater amount than it reduces through rates for movements that the SARR handles in cross-over service. Thus, under the existing approach, the higher the proportion of a cross-over move that takes place off the SARR, the lower the reduction of the through rate for that movement. To address this distortion, BNSF presents a modified percentage reduction approach which calculates the reduction using *through* rates for cross-over traffic. This approach preserves the pre-existing rate structure as the Board has directed.

WFA/Basin, on the other hand, advocate abandoning percentage reduction entirely, arguing that the percent reduction approach is subject to railroad gaming and that the rates established by the railroad effectively determine the rate that will be prescribed. In this case, there is no basis to disregard the Board's traditional approach on gaming grounds. BNSF's

Assistant Vice President, Coal Marketing West, Mr. Brautovitch testifies, in Reply Exhibit III.A-5, that the rates established by BNSF for the Laramie River plant were based on a variety of legitimate commercial considerations. They are real rates, not rates made for litigation. Moreover, BNSF shows that any anomaly in the rate prescription using the rate reduction approach is not, as WFA/Basin claim, a result of the BNSF's rate setting discretion but rather the result of aggressive assumptions about the revenues that the SARR would earn handling cross-over traffic. As discussed in Section III.A.1.a, WFA/Basin advocate an approach that would show that even if BNSF transported coal to Laramie River for free, BNSF would be found to be charging too much. The source of gaming in the SAC analysis is the complainants' unprincipled use of cross-over traffic.

WFA/Basin advocate using a new approach to calculating rate reductions that they designate RAM. This approach divides the SARR's shippers into two groups, competitive and captive, and then allocates responsibility for the supposed unattributable costs of the SARR among the captive shipper group on the basis of each captive shipper's gross ton miles. This approach is obviously flawed because it does not take account of relative demand elasticities among the captive shipper group, instead assuming that all captive shippers have the same elasticity of demand. The gross ton mile allocation method ensures that all captive shippers contribute to the SARR's joint and common costs in direct proportion to ton-miles instead of based on the shipper's demand. WFA/Basin have provided no evidence to support the notion, already rejected by the ICC, that gross ton miles are somehow related to demand elasticities, or to substantiate the clearly erroneous proposition that all captive shippers exhibit identical demand elasticities.

As a fallback position, WFA/Basin advocate what they term the "Reduced Mark-Up" method, an equally flawed approach that is logically inconsistent with the RAM approach.[19] The Reduced Mark-Up approach assumes, in contrast to RAM, that every shipper has a different demand elasticity and that such demand elasticity can be calculated based on the arbitrary allocation of cross-over revenues WFA/Basin claim for the SARR. WFA/Basin's submission of mutually inconsistent approaches shows the lack of any principled basis on which they urge the Board to abandon the rate reduction approach. Moreover, the Reduced Mark-Up method also suffers from a fatal flaw relating to its approach to calculating demand elasticities for shippers. The Board recognized in the *Guidelines* that calculating demand elasticities is extremely complicated and almost certainly unworkable in the regulatory context. WFA/Basin ignore this problem and suggest that demand elasticities can be calculated, not with reference to the actual rates that BNSF charges shippers, but rather with respect to the arbitrary share of through revenues that the SARR claims for cross-over traffic. This revenue allocation to the SARR is not, however, demand based and obviously cannot provide a foundation for assessing shipper demand or Ramsey-based rates.

Finally, WFA/Basin claim that the Board should prescribe a single "average" rate for all PRB origins even though BNSF established three common carrier rates based on the origin mine region. The sole purpose of this "average" rate is to permit WFA/Basin to generate a lower overall rate that is distorted by the inclusion of phantom traffic from southern PRB mines. WFA/Basin, by their own admission, have traditionally taken nearly all of their coal from central and northern PRB mines. Nonetheless, in order to calculate an "average" rate, WFA/Basin assume that nearly {   }% of Laramie River coal will come from southern PRB mines in the

[19] WFA/Basin's Narrative contains virtually no explanation of this approach.

future. Because WFA/Basin calculate a much lower maximum SAC rate for southern mines than for central and northern mines, the net effect of including southern mines in the calculation is to produce a lower "average" rate than would otherwise be the case, and it is this lower "average" rate that WFA/Basin argue the Board should accept as the rate for all mine origins. Under this approach, WFA/Basin would be free to continue to source nearly all their coal from northern and central mines -- {

} -- and pay only an "average" rate that is premised on significant shipments from lower-rate mines. If the Board does conclude that a rate prescription is necessary, it should maintain BNSF's existing rate structure and establish three rates based on the origin mine regions specified in the challenged common carrier authority.

Respectfully submitted,

Samuel M. Sipe, Jr.
Anthony J. LaRocca
Linda S. Stein
STEPTOE & JOHNSON LLP
1330 Connecticut Avenue, N.W.
Washington, DC 20036
(202) 429-3000

ATTORNEYS FOR DEFENDANT

Richard E. Weicher
Michael E. Roper
BNSF RAILWAY COMPANY
2500 Lou Menk Drive
Fort Worth, TX 76131
(817) 352-2353

July 20, 2005

CERTIFICATE OF SERVICE

I hereby certify that this 20th day of July, 2005, I have served six copies of the foregoing Reply Evidence and Argument of BNSF Railway Company (Highly Confidential) and three copies of the Public Version to the following by hand delivery:

John H. LeSuer
Christopher A. Mills
Andrw B. Kolesar, III
Peter Pfohl
Slover & Loftus
1224 Seventeenth Street, N.W.
Washington, DC 20036

Anthony J. LaRocca

II. MARKET DOMINANCE

A. QUANTITATIVE EVIDENCE

1. Variable Costs

BNSF's reply evidence on quantitative market dominance is principally sponsored by Benton V. Fisher and Deborah G. Newland, who also sponsored BNSF's variable cost evidence on opening. On reply, Mr. Fisher and Ms. Newland provide a comprehensive critique of WFA/Basin's opening evidence. They also present BNSF's updated variable costs for the Laramie River movement. In this reply, Scott Castleberry, BNSF's Director Regulatory Costs and Harry W. Bues, a Senior Consultant at FTI Consulting, Inc. sponsor evidence relating to fuel consumption of Laramie River trains.

In BNSF's opening evidence, Mr. Fisher and Ms. Newland calculated BNSF's variable cost of service for moving coal from the Dry Fork, Eagle Butte, Caballo Rojo, Cordero and Jacobs Ranch mines in the PRB to WFA/Basin's Laramie River Generating Station near Moba, Wyoming. In order to calculate BNSF's variable costs, they relied on 2003 BNSF URCS unit costs. They incorporated actual fuel consumption for Laramie River trains and the results of a movement-specific study of locomotive ownership to adjust URCS system-average costs. The traffic and operating characteristics they used were based on Laramie River shipments that moved in the Fourth Quarter 2004, where available. The BNSF Fourth Quarter 2004 variable costs calculated by Mr. Fisher and Ms. Newland ranged between $1.61 and $2.05 per net ton, depending upon the origin mine.

In their opening evidence, WFA/Basin's witness, Joseph Plaistow, calculated that Fourth Quarter 2004 variable costs ranged between $1.21 and $1.45 per net ton depending on the origin mine. WFA/Basin's variable cost evidence was based on WFA/Basin's flawed development of their 2004 BNSF URCS. Mr. Plaistow adjusted BNSF's URCS system-average costs to reflect the results of WFA/Basin's alleged movement-specific studies.

As Mr. Fisher and Ms. Newland explain, the difference between the parties' variable cost evidence is principally a result of WFA/Basin's

- erroneous development of 2004 BNSF URCS;
- improper use of BNSF's invoices to UP for MOW work performed on the Joint Line to adjust BNSF's system-average MOW costs;
- improper use of BNSF's data to develop road property ownership costs;
- inclusion of zero ownership/lease costs for 30 percent of the locomotives used on Laramie River trains;
- misapplication of BNSF's maintenance contracts with third parties to develop an adjustment to BNSF's system-average locomotive maintenance costs;
- improper reliance on availability guarantees in BNSF's locomotive maintenance contracts to estimate the locomotive spare margin;
- omission of any switching costs;
- use of the obsolete URCS linking factor.

Following the filing of opening evidence and pursuant to *Ex Parte No. 638*, the parties participated in a technical conference and held additional meetings in order to reach agreement to the extent possible on traffic and operating characteristics for use in the variable-cost calculations. The parties stipulated to many of the traffic and operating characteristics of the WFA/Basin movement.[1]

In this Reply, Mr. Fisher and Ms. Newland have adjusted their calculation of variable costs for Fourth Quarter 2004 to reflect the *Ex Parte No. 638* agreement and BNSF's 2004

[1] BNSF Reply electronic workpaper "Letter to Board 5_13.pdf."

URCS. Mr. Fisher and Ms. Newland have also adjusted their calculations to accept certain movement-specific adjustments after correcting WFA/Basin's calculation and methodological errors described below. The resulting variable costs for Fourth Quarter 2004 in this reply evidence range from $1.73 to $2.10 per net ton. They have also adjusted their revenue calculations to reflect WFA/Basin's approach of including the fuel surcharge. As BNSF explains in Section III.A.3.a.(iii) of this Narrative, the BNSF revenues at issue in this case include revenues attributable to the fuel surcharge, and BNSF therefore agrees with WFA/Basin that they should be included as revenues in the R/VC calculations. The resultant R/VC ratios range from 3.21 to 3.61. The R/VC ratios are set out below in Section II.A.2., Table II.A-7 and Exhibit II.A-1.

The organization of this section of the narrative is consistent with the Board's Decision on *General Procedures for Presenting Evidence in Stand-Alone Cost Rate Cases.*[2] II.A.1.a. addresses the difference in the general cost-estimating procedures used by each party. Section II.A.1.b. describes the remaining differences in the traffic and operating characteristics used by each party and explains why the assumptions used by Mr. Fisher and Ms. Newland in areas where the parties could not reach agreement are superior to WFA/Basin's. Section II.A.1.b. examines the differences in certain cost adjustments made by the parties. Finally, Section II.A.2. presents the variable costs and R/VC ratios for Fourth Quarter 2004.

[2] *Ex Parte No. 347 (Sub-No.3)* (STB served March 12, 2001).

a. Differences in General Cost Estimating Procedure

(1) WFA/Basin's 2004 BNSF URCS is Wrong

WFA/Basin's version of BNSF's 2004 URCS contains an error that results in an understatement of variable costs for the issue traffic. WFA/Basin inexplicably exclude from their URCS more than $400 million of BNSF's actual freight expenses reported in the 2004 R-1.[3]

(2) URCS Linking Factor is Obsolete

The parties disagree regarding the propriety of applying the URCS linking factor. Mr. Fisher and Ms. Newland did not apply the linking factor, which is now obsolete and unnecessary. WFA/Basin applied the linking factor.

The linking factor was developed more than fifteen years ago by the ICC as a bridge from the Rail Form A ("RFA") costing system to the URCS costing system. Its purpose was "to generally preserve the status quo regarding the amount of traffic subject to Commission jurisdiction."[4] That purpose is no longer served by application of the linking factor which is no longer an accurate bridge between the RFA costing system and URCS. The ICC developed the linking factor based on data for the years 1983 through 1987 inclusive by comparing total variable costs calculated using each costing system. Since that calculation was performed, however, there have been substantial changes to components used in the two costing systems that suggest that the linking factor produced in 1988 is no longer valid.

One such component that has changed is the cost of capital. While RFA used the embedded cost of capital, URCS uses the current cost of capital. As Table II.A-1 below shows,

---

[3] Compare $8.8 billion in total operating expenses from WFA/Basin electronic workpaper "BNSF0490.A2" to $9.2 billion reported in BNSF's 2004 R-1 Schedule 410. BNSF Reply electronic workpaper "BNSF 2004 R-1 Schedule 410.pdf."

[4] Ex Parte No. 431 (Sub-No. 1), *Adoption of the Uniform Railroad Costing System for All Regulatory Purposes*, 5 I.C.C. 2d 894 (1989).

since the mid-1980s, there have been significant changes in both the embedded cost of capital and the current cost of capital. The current cost of capital, which URCS uses, has decreased from an average of 22 percent for 1983-1987, to an average of 14.4 percent for 1998-2003. During this same time period, the embedded cost of capital, which RFA used, has also decreased but at a different rate than that of the current cost of capital – from an average of 9.63 percent for 1983-1987, to 8.33 percent for 1998-2003. As a result, the 1988 linking factor is, in all likelihood, wrong and should not be used.

Table II.A-1
Cost of Capital Comparison

Year	Embedded Cost of Capital		Current Cost of Capital
	BNSF	Avg of Class I's	ICC / STB
1983-1987 Average	8.89%	9.63%	22.0%
1998-2003 Average	6.89%	8.33%	14.4%

Source: BNSF Reply electronic workpaper "Cost of Capital Comparison.xls."

b. Differences in the Traffic and Operating Characteristics Developed By BNSF and WFA/Basin

The traffic and operating characteristics by mine origin for all shipments costed are presented in BNSF Reply Exhibit II.A-2. Exhibit II.A-2 reflect the *Ex Parte No. 638* agreements on traffic and operating characteristics. The differences between the parties' evidence on traffic and operating characteristics are discussed below.

<u>(3) Crew Districts, Loaded and Empty Direction; Turnaround Crews (Items 27, 28 and 29)</u>

BNSF generally accepts WFA/Basin's crew wage evidence in this reply. See II.A.c.(9) below.

(4) Locomotive Units (Item 30)

The parties agree that the Laramie River trains are powered predominantly by 4,000 HP SD70MACs drawn from BNSF's Alliance locomotive pool. At the *Ex Parte No. 638* Technical Conference, the parties stipulated to the number of locomotive units used on the Laramie River trains for the movements that both parties costed on opening.[5] The parties disagree on the development of locomotive ownership and maintenance costs for the units that powered the Laramie River trains. These issues are discussed below in Sections II.A.1.c.(6), (d) and (13).

(5) Locomotive Spare Margin (Item 33)

Mr. Fisher and Ms. Newland include a locomotive spare margin based on data produced to WFA/Basin in discovery showing the actual availability and utilization of the locomotives used to power the Laramie River trains.[6] Their development of the spare margin is described in Section II.A.1.b.(1)(b) of BNSF's Opening evidence. By contrast, WFA/Basin misapplied BNSF's locomotive maintenance contracts to estimate a factor that is significantly below BNSF's actual spare margin.[7] The difference between the parties' development of locomotive spare margin is described below in Section II.A.1.c.(13)(a).

(6) Helper Service and Crews (Items 37 and 38)

While the parties disagree as to whether the Laramie River train is helped[8], this issue is mooted by Mr. Fisher and Ms. Newland's use of WFA/Basin's crew wage evidence on this reply

[5] BNSF Reply electronic workpaper "Letter to Board 5_13.pdf."

[6] BNSF Opening electronic workpaper "Spare Margin.xls."

[7] WFA/Basin Opening electronic workpaper "Loco Maint Adjust 2004.123."

[8] As BNSF disclosed in discovery, Laramie River trains originating coal on the Campbell Sub are helped by the Campbell Sub helper and the Belle Ayr helper. BNSF Reply electronic workpaper "Helpers.pdf."

and by the fact that neither party included LUM costs for the helpers that are required to assist Laramie River trains.

(7) Joint Facility Payments (Item 41)

The parties agree on the joint facilities used by Laramie River trains but differ on how payments should be treated in developing BNSF's variable costs. These differences are discussed below in Section II.A.1.c.(6)(a).

c. Differences in Variable Costs Developed by BNSF and WFA/Basin

Table II.A-2 compares WFA/Basin's Opening cost calculations with BNSF's Reply calculations for shipments originating from Eagle Butte in Fourth Quarter 2004. For this comparison, Mr. Fisher and Ms. Newland adjusted WFA/Basin's opening evidence to reflect the traffic and operating characteristics to which the parties agreed pursuant to *Ex Parte No. 638* subsequent to the filing of opening evidence in this proceeding.[9] BNSF Reply Exhibit II.A-3 presents similar comparisons for each issue movement by origin mine and rate. The differences between the parties' calculations of the individual cost components are discussed in detail below.

Table II.A-2
Comparison of Variable Costs Per Carload and Ton
Eagle Butte Mine to Laramie River Station
Fourth Quarter 2004

Item	BNSF Reply	WFA/Basin Opening*	Difference
1. Carload O/T - Clerical Expense	{ }	{ }	($0.22)
2 Carload Handling – Other Expense	{ }	{ }	($0.02)
3. Switching Expense – Yard Locos	{ }	-	($23.32)
4. Loop Track Expense (GTM and LUM)	-	{ }	{ }

[9] To adjust WFA/Basin's evidence to reflect the *Ex Parte No. 638* agreement on various traffic and operating characteristics, Mr. Fisher and Ms. Newland simply replaced the relevant inputs in WFA/Basin's variable-cost program with the stipulated values. BNSF Reply electronic workpaper "VC WFA 2004 Open_BNSF Revised.123."

Item	BNSF Reply	WFA/Basin Opening*	Difference
5. Switching Expense - Road Locos	{ }	-	{ }
6. Gross Ton-Mile Expense (GTM)	{ }	{ }	($31.77)
7. Train-Mile Expense – Other Than Crew	{ }	{ }	$0.97
8. Locomotive Unit-Mile Expense (excluding Ownership)	{ }	{ }	($16.91)
9. Train-Mile-Expense - T&E Crew	{ }	{ }	-($1.78)
10. Helper Expense – LUM	-	-	-
11. Helper Expense – Crew	-	-	-
12. Freight Car Expense (RR-Owned Only)	-	-	-
13. User Responsibility for Freight Car Repairs	{ }	-	{ }
14. Loss & Damage Expense	{ }	-	{ }
15. Locomotive Ownership Expense	{ }	{ }	($9.01)
16. EOTD Ownership Expense	-	-	-
17. Joint Facility Charge	-	-	-
18. Third Party Loading Crew Charges	-	{ }	{ }
19. Third Party Unloading Charges	-	{ }	{ }
18. Total Variable Cost per Carload (Lines 1-18)	$252.38	$175.97	($76.42)
19. RFA-URCS Linking Factor	N/A	0.9934	N/A
20. Linked Variable Cost Per Carload	**$252.38**	**$174.80**	**($77.58)**
21. Net Tons Per Carload	120.4	120.4	-
22. Variable Cost Per Ton	**$2.10**	**$1.45**	**($0.64)**
23. Rate Per Ton	$6.72	$6.72	-
24. R/VC Ratio	**321%**	**463%**	**143%**

*Adjusted to reflect the *Ex Parte No. 638* agreements on various operating and traffic characteristics.

(1) Carload Originated or Terminated – Clerical

Both parties apply the standard *Ex Parte No. 399* trainload adjustment to URCS system-average unit costs for station clerical expense. Differences between the parties on opening resulted from the use of different base year BNSF URCS to develop variable costs. Although BNSF now uses a 2004 BNSF URCS, differences remain because of an error in WFA/Basin's development of their 2004 BNSF URCS discussed above in section II.A. 1.a.(1).

(2) Carload Handling – Other

On reply, BNSF accepts WFA/Basin's adjustment to carload handling costs.[10]

(3) Switching Expenses - Yard Locomotive

The parties differ on their development of yard switching costs. WFA/Basin included no yard switching costs based on the fact that Laramie River trains do not pass through a locomotive servicing yard.[11] While Laramie River trains do not pass through a yard, locomotives that are used in Laramie River service are switched out of Laramie River trains en route and taken to a yard for FRA inspections, servicing and repair as needed. There is clearly yard switching associated with these locomotives that result from their use in Laramie River service. BNSF, however, does not maintain data showing the specific quantities of such switching activity. Consequently, on opening Mr. Fisher and Ms. Newland relied on URCS system-average switching. In developing the URCS switching costs, Mr. Fisher and Ms. Newland applied the *Ex Parte No. 399* trainload adjustments to reflect the efficiencies of coal unit-train service.[12]

(4) Origin and Destination Loop Track Expenses

The parties stipulated to the loaded and empty loop-track miles at origin and destination. Because BNSF used system-average switch minutes, which includes expenses associated with loading and unloading operations, BNSF did not separately calculate loop-track expenses. In any event, WFA/Basin's development of loop-track expenses relies on understated locomotive maintenance and fuel costs.

[10] BNSF Reply electronic workpaper "BNSF MOBA REPLY PRG.123."

[11] WFA/Basin Opening Nar. II-A-9 and WFA/Basin Opening electronic workpaper "VC WFA 2004 Open.123."

[12] As the URCS switching costs include switching at origin and destination, they did not develop origin and destination loop track costs.

(5) Switching Expense - Road Locomotive - Non Yard Tracks

WFA/Basin included no switching expense for road locomotives based on the erroneous claim that no switching is performed on the Laramie River trains. Data produced in discovery, however, reflects road locomotives being switched on and off the Laramie River trains. Since Laramie River trains do not pass through a yard, locomotives that require service or repair must be switched out en route for freshly serviced locomotives. WFA/Basin ignores this switching activity. Because BNSF does not maintain data sufficient to quantify this switching activity or any other switching activity associated with the Laramie River trains, Mr. Fisher and Ms. Newland used BNSF system-average switching costs as explained in Section II.A.1.c.(3) above.

(6) Gross Ton-Mile Expense

Disagreement on gross ton-mile ("GTM") expense accounts for most of the total difference between the parties' variable-cost evidence. GTM expenses include expenses associated with maintenance of way, road-property ownership, fuel, locomotive maintenance, and other locomotive and train administrative activities. The parties' disagreements encompass all of these categories. The differences between BNSF's and WFA/Basin's GTM expense per carload for the representative movement used in this Reply (*i.e.*, Eagle Butte-Laramie River Station, Fourth Quarter 2004) are shown in Table II.A-3.

Table II.A-3
Comparison of GTM Expense Per Carload
Eagle Butte to Laramie River Station
Fourth Quarter 2004

Item	BNSF Reply	WFA/Basin Opening*	Difference
Maintenance of Way	$13.98	$9.51	($4.47)
Road Property Ownership	$37.83	$29.57	($8.26)
Fuel	$32.19	$19.27	($12.92)
Locomotive Maintenance**	$5.43	$4.34	($1.09)
Other GTM	$15.23	$10.19	($5.04)
TOTAL	$104.65	$72.88	($31.77)

*Adjusted to reflect the *Ex Parte No. 638* agreements on various traffic and operating characteristics.

**Excludes costs associated with WFA/Basin's application of the departmental overhead, which are included in "Other GTM" for comparison to BNSF's expenses.

(a) Maintenance of Way ("MOW")

The parties disagree on MOW variable costs for the issue route. On opening, Mr. Fisher and Ms. Newland developed variable costs using BNSF's URCS system-average MOW costs. In its opening, WFA/Basin also used BNSF's URCS system-average costs for the portion of the route that does not include the BNSF/UP Joint Line. For the portion of the route over BNSF and UP's Joint Line, however, WFA/Basin rely on a special study of BNSF's invoices to UP for MOW work performed by BNSF on the Joint Line. WFA/Basin purport to have applied BNSF's general standards for expensing or capitalizing maintenance expenses to BNSF's 2003 invoices in order to determine BNSF's total operating and total capital MOW expenses for 2003. Next, WFA/Basin applied the joint facility variability factor to BNSF's 2003 MOW operating expenses. Lastly, they weighted the results over each line segment by Laramie River train GTMs for each segment. While there are several problems with WFA/Basin's special study, including in many instances arbitrary allocations of MOW expenses between capital and operating, the fundamental flaw in their approach is their application of the URCS joint facility variability factor -- which is lower than the URCS MOW variability factor -- to MOW expenses. Further, their reliance on just one year of data is inconsistent with URCS and is inappropriate.

i) WFA/Basin Applies The Wrong Variability Factor

WFA/Basin's erroneous and unsupported application of the joint facility variability factor of 63 percent to MOW expenses understates BNSF's variable MOW expenses for the Joint Line portion of the issue route. WFA/Basin justify application of the joint facility factor on the grounds that carriers credit or debit "rental" fees received or paid for use of joint facilities. WFA/Basin Nar. at II-A-15. However, the expenses that WFA/Basin identify from BNSF's invoices to UP are not rental fees, but are BNSF's share of the actual MOW expenses that BNSF incurs to maintain the Joint Line and are reported in BNSF's R-1 as MOW expenses. There is simply no basis for treating these MOW expenses as joint facility costs for purposes of developing BNSF's variable costs for the Joint Line portion of the issue movement. Rather, a route-specific BNSF URCS variability factor for MOW costs, that properly reflects the higher than system-average densities on the issue route, must be used.[13]

[13] URCS recognizes that the variability of MOW expenses changes with traffic density. As density increases, so does the percentage of MOW expenses that is variable. Since density on the Joint Line is several times BNSF's system-average density, the route-specific MOW variability factor is substantially higher than BNSF's URCS system-average MOW variability factor and therefore application of the system-average variability factor would understate BNSF's variable costs for the issue movement.

ii) WFA/Basin's Reliance On Just One Year Of Data Is Inconsistent With URCS

WFA/Basin's use of only 2003 data is inconsistent with URCS MOW costs that reflect a five-year outlook.[14] URCS' five-year approach recognizes that MOW spending cycles extend well beyond one year. Measuring costs over a five-year period properly accounts for the cyclical nature of MOW costs. WFA/Basin's results based on just one year of data are inappropriate and should be rejected. Accordingly, there is no basis for using a purported movement-specific MOW cost to determine variable costs for the LRR traffic and the URCS system-average should be used.

(b) Road Property Ownership

On opening, WFA/Basin present an analysis of the property accounting records that BNSF provided in discovery. In several prior rate cases, BNSF opposed production of these data on the ground that there were unusable for purposes of developing a route-specific adjustment to BNSF's system-average road property investment costs.[15] The Board compelled BNSF's production of the road property data on the ground that BNSF's objections went to the weight and credibility of the data and not their discoverability.[16] In light of these decisions, BNSF produced road property data to WFA/Basin. In doing so, BNSF advised WFA/Basin of the problems with the data that made them unusable for purposes of developing route-specific road property investment and depreciation. BNSF also explained in detail why BNSF's road property

[14] URCS Worktable D1, BNSF Reply electronic workpaper "BNSF URCS 2004.zip." BNSF produced Joint Facility data in discovery covering January 1, 1999 through November 30, 2004.

[15] BNSF Reply Exh. II-A-4.

[16] *OTP*, Docket No. 42071 (STB served Nov. 15, 2002), at 9.

data cannot be used to make a movement –specific adjustment in its publicly filed Rebuttal Evidence in STB Docket No. 41191 (Sub. No. 1). That discussion is equally applicable here and is incorporated in this filing as BNSF Reply Exhibit II.A-4. In light of these problems with the data, on opening, Mr. Fisher and Ms. Newland used URCS system-average road property investment and depreciation costs in developing variable costs for the issue movement.

In addition, the methodology that WFA/Basin use to develop an adjustment to BNSF's road property investment is flawed and further understates BNSF's road property investment in the issue route. WFA/Basin develop an adjustment ratio of route specific costs to system-wide costs using BNSF's FADB data. To calculate the denominator of this ratio -- the system-wide FADB based net investment -- WFA/Basin adds BNSF's FADB net investment to its Property In Service Not Unitized (PISNU) account and its ATSF Purchase Accounting. However, because of the problems with the depreciation data discussed in BNSF Reply Exhibit II.A-4, the total FADB-based net investment that WFA/Basin calculate is approximately { } billion less than the system-wide net investment reported in BNSF's R-1 on which URCS costs are based. WFA/Basin attempt to force a reconciliation between the investment balances by increasing the FADB net investment, PISNU and Purchase Accounting by the { } billion difference. WFA/Basin then subtract from the denominator the investments in FADB that are not assigned to a specific line segment ("unassigned investment") apparently to account for the fact that no unassigned investment is included in the numerator (the route-specific net investment).

Of course, the need for a { } billion adjustment to reconcile the FADB net investment data with the reported R-1 data highlights why the FADB data can not be used to make a movement-specific adjustment. The principal reason for this difference between the two sets of data is that they are not compatible. As explained in Exhibit II.A-4, the depreciation methodology followed by BNSF and reported in the R-1 is based on group life accounting, while the depreciation data included in the FADB records are estimated by a depreciation calculator that applies a simple arithmetic formula to the historical investments. The FADB depreciation data overstate depreciation and therefore understate net investment. The overstatement is particularly severe on high density lines such as the issue route. Nevertheless, WFA/Basin attempt to force a reconciliation by increasing the FADB net investment, PISNU and Purchase Accounting. Even if it were possible to use the FADB data to develop a reliable adjustment -- and it is not -- there are several flaws in WFA/Basin's approach that further understate BNSF's road property investment for the issue route.

The fundamental flaw in WFA/Basin's reconciliation is that it increases the system-wide investment (i.e., the denominator) without making any corresponding increase to the issue route investment (i.e., the numerator), thereby further understating costs. Put another way, WFA/Basin's approach assumes that BNSF's net investment across its system is { } billion higher than the FADB data show and that none of that investment is on the issue route. Increasing the denominator without making a corresponding adjustment to the numerator produces a lower adjustment factor.

Further, adjusting ATSF Purchase Accounting in order to reconcile the total FADB based system-wide costs with BNSF's reported net investment is not justified. WFA/Basin have provided no evidence that the Purchase Accounting balances are understated. Indeed, it is clear that the difference is principally due to the problems with the FADB's estimates of accumulated depreciation, and not to Purchase Accounting.

Lastly, WFA/Basin's flawed treatment of unassigned investments also distorts WFA/Basin's adjustment. When WFA/Basin reduced the system-wide investment by the unassigned investment, they failed to reflect the earlier adjustment they made to the total FADB net investment. That adjustment increased all investment including unassigned investment. By reducing the system-wide totals by the unadjusted unassigned investment, WFA/Basin's adjustment denominator continues to include unassigned investment, thereby overstating the denominator of its adjustment ratio, the system-wide total net investment and further understating BNSF's net investment for the issue route.

(c) Fuel

The parties disagree on fuel consumption by Laramie River trains. On opening, Mr. Fisher and Ms. Newland developed fuel costs based on data maintained in the ordinary course of business that show actual fuel consumption for Laramie River trains. As explained on opening, the fuel consumption data are based on an analysis by BNSF's Fuel Burn Model of locomotive event recorder data that are automatically downloaded from Laramie River trains. BNSF Opening Nar. at II-12 to 15. These data show that Laramie River trains consume fuel at a rate that exceeds BNSF's system-average. By contrast, WFA/Basin developed fuel costs using BNSF's system average fuel consumption rate. WFA/Basin Opening Nar. at II-A-19. WFA/Basin explain in their SAC presentation why they disregarded BNSF's fuel consumption data. *Id.* at III-D-12 to14.

WFA/Basin make two criticisms of BNSF's Fuel Burn Model data. First, they claim that data are not available for a representative sample of trains. WFA/Basin claim that they identified data for only { } loaded LRS trains and { } empty LRS trains out of a total of { } trains moving during the March-December 2004 time period. WFA/Basin Opening Nar. at III-D-13. However, Mr. Fisher and Ms. Newland identified { } loaded and { } empty trains with usable data in the Fuel Burn Model data.[17] The fuel consumption data for these trains are summarized in the table below:

Table II.A-4
Locomotive Fuel Consumption for LRS Trains
Developed from Fuel Burn Model Data (Average Gallons Per Trains)

Mine	Loaded	Empty	Loaded	Empty
Eagle Butte	{ }	{ }	{ }	{ }
Dry Fork	{ }	{ }	{ }	{ }
Caballo Rojo	{ }	{ }	{ }	{ }
Cordero	{ }	{ }	{ }	{ }
Jacobs Ranch	{ }	{ }	{ }	{ }

Source: BNSF Opening electronic workpaper "MOBA Event Recorder Fuel Burn Data.xls," worksheet "MOBA TRAINS."

These data are sufficient to develop a representative sample of locomotive fuel consumption on LRS trains. The Board has previously accepted movement-specific fuel studies relying on data collected for a subset of actual train movements.[18]

Second, WFA/Basin claim that there are inconsistencies in the fuel consumption data and therefore they can not be used. As evidence, WFA/Basin identify a record that they claim shows fuel consumption that ranged from { } gallons to { } gallons for two locomotives on the same loaded LRS train, CDMMOL 74. However, WFA/Basin is wrong. The following data are shown for train CDMMOL 74, departing Cordero Mine on September 4, 2004:

[17] BNSF Opening electronic workpaper "MOBA Event Recorder Fuel Burn Data.xls," worksheet "MOBA TRAINS." As BNSF explains in Section III.D.1.d, only certain locomotives are equipped with the technology needed to wirelessly transmit event recorder data to be analyzed by the Fuel Burn Model, and therefore BNSF captures and analyzes such data for a subset of its trains.

[18] *TMPA* at 58, 82; *Xcel* at 60, 137-138.

Table II.A-5
Fuel Burn Model Consumption Data for
Loaded Train CDMMOL74 by Segment (Gallons)

Locomotive Unit	Locomotive Type	Cordero – Converse Jct.	Converse Jct. - Moba
BNSF 9660	SD70MAC	{ }	{ }
BNSF 9968	SD70MAC	{ }	{ }
BNSF 9599	SD70MAC	{ }	{ }
BNSF 5651	AC4400	{ }	{ }

Source: BNSF Opening electronic workpaper "MOBA Event Recorder Fuel Burn Data.xls," worksheet "MOBA LOCOMOTIVES," at rows 155-161, column "N."

As shown in the table above, three locomotives powered the train from Cordero to Converse Junction, two of which were SD70MAC locomotives consuming { } gallons of fuel, and the third, an AC4400 locomotive, consuming { } gallons of fuel. A fourth locomotive, an SD70MAC, was added to the consist at Converse Junction. None of these locomotives consumed { } gallons, as WFA/Basin claim.[19]

In light of WFA/Basin's challenge to BNSF's fuel consumption data, Messrs. Castleberry and Bues performed a special study of the fuel meter tickets that BNSF produced in discovery in order to confirm the accuracy of BNSF's fuel consumption data. The fuel meter tickets show by date and time for each individual locomotive the gallons of fuel that BNSF's direct-to-locomotive ("DTL") fueling contractor, QRS, put into locomotives at the Laramie River Plant.[20] Using BNSF's train movement data, Messrs. Castleberry and Bues matched the QRS fuel meter

---

[19] BNSF reviewed its Fuel Burn Model data and identified a separate loaded train, EBMMOL 55, departing from Eagle Butte mine on August 21, 2004, with an AC4400 locomotive that consumed { } gallons of fuel between Eagle Butte and Moba. This may be the locomotive referenced in WFA/Basin's opening evidence. However, each of the remaining locomotives on that train, all SD70MACs, consumed { } gallons of fuel, not even close to the { } gallon example cited by WFA/Basin. BNSF Opening electronic workpaper "MOBA Event Recorder FuelBurnData.xls," worksheet "MOBA LOCOMOTIVES," rows 139 -142, column "N."

[20] BNSF Reply electronic workpaper "Fuel by loco by 04 month.zip."

tickets for each Laramie River train with that train's operating characteristics.[21] They then calculated fuel consumption for the Laramie River trains.[22] Table II.A-6 below shows the average fuel consumption for Laramie River trains by mine developed using the fuel meter tickets and compares those results to BNSF's fuel consumption data.

Table II.A-6
Comparison of Locomotive Fuel Consumption for LRS Trains Developed from Fuel Burn Model Data and QRS Fuel Tickets (Average Gallons Per Train)

Mine	Fuel Burn Average Gallons[23]	QRS Fuel Tickets		% Difference
		Number of Trains	Average Gallons	
Eagle Butte	{ }	{ }	{ }	{ }
Dry Fork	{ }	{ }	{ }	{ }
Caballo Rojo	{ }	{ }	{ }	{ }
Cordero	{ }	{ }	{ }	{ }
Jacobs Ranch	{ }	{ }	{ }	{ }

Source: BNSF Reply electronic workpaper "Moba Fuel Tkts v Event Recd Compare.xls."

As Table II.A-6 demonstrates, the fuel meter study results are comparable to the fuel consumption reported in the Fuel Burn Model data. Accordingly, Mr. Fisher and Ms. Newland continue to use BNSF's fuel consumption data to calculate variable costs.

---

[21] WFA/Basin claim that these tickets cannot be used as an accurate measure of fuel consumption because there is no documentation of the gallons consumed or miles run by the locomotives on LRS trains. WFA/Basin Opening Nar. at III-D-13. However, Messrs. Castleberry and Bues were able to match the trains up with the train movement data which shows the amount of time that each locomotive spent on each LRS train. BNSF Opening electronic workpaper "Train Movement Data.xls."

[22] BNSF Reply electronic workpaper "Moba Fuel Tkts v Event Recd Compare.xls."

[23] Since Fuel Burn Model data are collected by segment for the purpose of evaluating the over-the-road performance of BNSF engineers, these data do not include fuel consumed at the mine or at the plant. For the purpose of developing an accurate comparison to QRS fuel meter data, which account for all fuel dispensed to locomotives on LRS trains, BNSF included in this table fuel consumption at the idle rate (3 gallons per hour) to account for the average dwell time at each mine and at Moba. Dwell times are shown in BNSF Reply electronic workpaper "Cycle Time & LUM Summary.xls," worksheet "Cycle Summary."

(d) Locomotive Maintenance Costs

The parties disagree on locomotive maintenance costs. As BNSF does not maintain data that capture the costs of maintaining any specific locomotive or class of locomotives, BNSF uses URCS system-average locomotive maintenance costs consistent with Board precedent. *See* BNSF Nar. at II-12 and 17. WFA/Basin also use BNSF's system-average locomotive maintenance costs for the locomotives in Laramie River service that were not subject to a maintenance contract with the locomotive manufacturer during the period costed.[24] For locomotives used in WFA/Basin service that were subject to a maintenance contract with a third-party vendor, however, WFA/Basin misapply the terms of those contracts and exclude overhaul costs to produce costs estimates that are, implausibly, as much as 42-percent below BNSF's system-average locomotive maintenance cost.[25]

There are several problems with WFA/Basin's approach and errors in their development of a locomotive maintenance adjustment, including their

- Failure to account for non-routine locomotive maintenance costs;
- Failure to account for the fact that BNSF's maintenance payments to { } do not include the cost of the labor that is provided by BNSF; and
- Failure to account for the complete cost of overhauling locomotives under contract with { }

[24] WFA/Basin Opening Exh. II-A-7.

[25] WFA/Basin Opening workpaper "LOCO MAINT ADJUST 2004.123."

i) WFA/Basin Fail to Account for Non-Routine Locomotive Maintenance Costs

As the Board recognized in *TMPA*, payments made pursuant to BNSF's locomotive maintenance contracts[26] account "for only routine locomotive maintenance costs."[27] These payments, however, do not include substantial expenses that BNSF incurs for { }[29] BNSF is unable to identify these costs on a locomotive series, pool, or unit specific basis. Without an ability to discern the magnitude of these items, the Board should find, as it did in the recent *TMPA* and *Xcel* decisions,[30] that system-average locomotive maintenance costs are applicable to all units that power the Laramie River trains.

---

[26] The { } contract used by WFA/Basin is one of the locomotive maintenance contracts that complainants used in the *TMPA* case. { } BNSF Reply electronic workpaper { }

[27] *TMPA* at 58.

[28] The maintenance agreements do not cover all repairs. For example, failures due to { } *See* BNSF Reply electronic workpaper { } BNSF Reply electronic workpaper { } As BNSF must at all times maintain an available locomotive fleet that meets its shippers' needs, it must perform unscheduled repairs regardless of any expectation of reimbursement by { } under the contract. *See also* BNSF Reply electronic workpaper { }

[29] There are hundreds of BNSF mechanical personnel who work in the Alliance shop that { }. That agreement provides that { } reimburse BNSF for { } *See* BNSF Reply electronic workpaper { } These costs, which the Board has consistently found are includable in variable cost analyses, are entirely absent from WFA/Basin's adjustment because they are not covered by the { } contract. *E.g.*, *FMC* at 86; *WPL* at 57. BNSF Reply electronic workpaper { }

[30] *TMPA* at 58; *Xcel* at 138.

ii) WFA/Basin Exclude BNSF's Labor and Facility Costs for the Units Under Contract with { }

WFA/Basin's calculation of contract costs for the units that are subject to the { } agreement improperly excludes labor and facilities costs. Under the {

} which obviously understates BNSF's actual costs of maintenance for units maintained by { } by excluding labor and facility costs.

iii) WFA/Basin Miscalculate BNSF's Overhaul Costs for Units Under Contract with { }

Further, WFA/Basin flawed development of overhaul expense per mile for units maintained under the { } contract substantially understates BNSF's actual overhaul costs. WFA/Basin developed their per mile cost by dividing the amount that BNSF paid { } overhauls that were performed in 2004 by the total miles traversed by { } units under the { } contract to produce an overhaul cost of { } per mile for all { } units.[33] This approach improperly assumes that the number of locomotives overhauled in one year is an

[31] BNSF Reply electronic workpaper { }

[32] BNSF Reply electronic workpaper { }

[33] WFA/Basin Opening electronic workpaper "Loco Maint Adjust 2004.123."

appropriate basis for calculating overhaul costs and, that the payments that BNSF makes to EMD represent BNSF's total cost of the overhaul. Neither assumption is correct.

WFA/Basin's use of the overhaul payments that BNSF made to EMD for a one-year period understates overhaul costs and is inconsistent with URCS.[34] URCS normalizes locomotive repair costs over a three-year period to reflect a longer maintenance cycle.[35] Normalization of these repair costs recognizes that such costs can vary significantly from year-to-year, and a longer maintenance cycle than WFA/Basin's one-year snapshot should be used to calculate variable costs. The difference between WFA/Basin's approach and the normalized cost for overhauling the { } units under contract with { } is substantial. Under the { } contract, units are overhauled either { } miles, whichever comes first.[36] Assuming the more conservative outcome, that the units will be overhauled every { } years, results in a normalized annual expense based on the annual overhaul of more than { } units. Since WFA/Basin assume costs based on just { } units WFA/Basin's approach understates BNSF's overhaul costs by more than 60 percent.[37]

Second, WFA/Basin's cost is based on BNSF's overhaul payments to { } which do not include the total cost of BNSF's overhaul expense. As discussed more fully in Section III.D.1.b., BNSF's payments to { } only.[38] In addition to these amounts, however, BNSF incurs significant labor and facilities expense that is neither reflected

---

[34] *Id.*

[35] *See* URCS Worktable D3.

[36] BNSF Reply electronic workpaper { }

[37] { } = 62 percent

[38] The Fourth and Fifth Amendments to the Amended and Restated Maintenance Agreement between BNSF and { }. BNSF Reply electronic workpaper { }

in the payments to { } Consequently, BNSF's actual cost for locomotive overhauls is substantially higher than WFA/Basin calculate.

Correcting these two errors in WFA/Basin's calculation of overhaul costs suggests that BNSF's locomotive maintenance costs for the units used on the Laramie River train under contract with { } are well above system-average.

(e) Other GTM

The differences between BNSF and WFA/Basin in the category of other gross ton-mile expenses are primarily due to the impact on overhead costs of WFA/Basin's locomotive maintenance adjustment and understated fuel costs, discussed above.

(7) Train-Mile Expense - Other Than Crew

The parties disagree on "train mile-other" expenses. Mr. Fisher and Ms. Newland rely on BNSF URCS system-average costs. WFA/Basin make a flawed movement-specific adjustment based on a special study of Laramie River train inspection costs. WFA/Basin calculate their adjustment by first developing an average inspection cost per car on the Laramie River train based on an analysis of QRS invoices.[39] They then improperly apply the BNSF URCS system-average variability factor to this inspection cost. Since the variability factor varies with density and densities on the issue route are much higher than BNSF's system-average density, WFA/Basin should have used a route-specific variability factor. Use of the URCS system-average variability factor understates BNSF's variable costs and should be rejected.

[39] QRS is the third party contractor that performs car inspections at the Laramie River plant.

(8) Locomotive Unit-Mile Expense

The parties disagree on the locomotive unit-mile expense. This expense is comprised of (1) fuel; (2) locomotive maintenance; (3) locomotive servicing; (4) locomotive ownership; and (5) other expenses, including overheads. The differences between the parties with respect to fuel, locomotive maintenance and locomotive ownership are addressed in Sections II.A.1.c.(6)(c), II.A.1.c.(6)(d) and II.A.1.c (13) respectively. The parties agree on the unit costs for locomotive servicing. They present differing costs for other expenses, due to the impact on overhead costs of WFA/Basin's inappropriate adjustments to locomotive maintenance expenses discussed in Section II.A.1.c.(6)(d) above.

(9) Train-Mile Expense - Crew

On opening, Mr. Fisher and Ms. Newland used URCS system-average train crew expenses. BNSF Nar. at II-10. WFA/Basin performed a study of train crew expenses for the Laramie River train using train crew wage data that BNSF provided in discovery. WFA/Basin, however, omit costs including helper crew wages. As a result, WFA/Basin understate BNSF's actual crew wage costs. Nevertheless, for the convenience of the Board, BNSF accepts WFA/Basin's movement-specific crew wage costs (and corresponding T&E index) with one adjustment; Mr. Fisher and Ms. Newland exclude loading crew costs to avoid a potential double-count in the system-average switching costs.

(10) Helper Expense - LUM

See II.A.1.b.(6) above.

(11) Helper Expense – Crew

See II.A.1.b.(6) above.

(12) Loss and Damage Expenses

The parties disagree on loss and damage expenses. Mr. Fisher and Ms. Newland include URCS system-average loss and damage expense in developing variable costs for the issue traffic. WFA/Basin include no loss and damage expense on the grounds that there has been no loss and damage experienced in the 2002-2004 period. In prior rate cases, the Board has accepted loss and damage costs based on averages for varying durations.[40] The lack of a standard time frame allows parties to pick a time frame that either maximizes or minimizes this expense. This approach provides an opportunity for manipulation and no principled basis for a Board determination of the appropriate variable costs in coal rate cases. WFA/Basin's approach also ignores the fact that even a single derailment, which can happen anytime, would substantially alter the loss and damage experience. In fact, on May 14, 2005, a Laramie River train derailed resulting in an estimated more than { } in loss and damages.[41] In this reply, Mr. Fisher and Ms. Newland continue to use URCS system-average cost, which they believe provides the most reliable measure of loss and damage expenses likely to be incurred in the medium to long run.

(13) Locomotive Ownership Expense

The parties disagree about the proper calculation of locomotive ownership expense. The differences in the parties' calculations are primarily due to the different approaches they take with respect to (a) spare margin and (b) development of lease and acquisition costs.

---

[40] *E.g.*, *TMPA*, at 64 (six-year average of loss and damage data for TMPA shipments), *WPL*, at 58 (five-year average of loss and damage data for WPL shipments), and *FMC*, at 83 (one-year average of URCS system-average loss and damage data).

[41] BNSF Reply electronic workpaper "Derailment.pdf."

(a) Spare Margin

On opening, BNSF presented empirical evidence supporting a spare margin of { } and explained the basis for its spare margin. BNSF Opening Nar. at II-15 to 16. Consistent with Board precedent, BNSF's spare margin accounts for both unavailable time and unutilized time.[42] Mr. Fisher and Ms. Newland continue to rely on that special study of locomotive spare margin in this reply. WFA/Basin presents locomotive spare-margin evidence purporting to show that BNSF's spare margin is just { } percent. However, WFA/Basin's spare margin evidence fails to account for unutilized time and, for unavailable time, improperly relies on "availability guarantees" contained in BNSF's locomotive maintenance contracts with third parties.[43] As explained below, the availability guarantees in the locomotive maintenance contracts are not an appropriate basis for developing BNSF's locomotive spare margin.

The Board has already recognized in its *TMPA* decision that BNSF's locomotive maintenance contracts do not account for all maintenance needs with respect to units covered by such contracts.[44] It follows that "unavailability" time under the contract does not include all time that a locomotive is unavailable to the railroad for revenue service. For example, locomotives involved in { } would not be considered as "unavailable" under the contracts, but those units clearly are not available to the railroad for revenue service.[45]

---

[42] *Xcel* at 142-43.

[43] WFA/Basin Opening electronic workpaper "Loco Maint Adjust 2004.123."

[44] *TMPA* at 58.

[45] BNSF Reply electronic workpapers {

Moreover, the contract availability guarantee in the { } contract, which covers approximately 40 percent of the locomotives identified by WFA/Basin, {

} Because BNSF and {

}[46] Thus, those guarantees are meaningless and cannot be used as a measure of locomotive availability.

Further, WFA/Basin's use of the contract availability percentage as BNSF's locomotive spare margin is mathematically incorrect.[47] Spare margin is expressed as a percentage of the actual *available* time, which is consistent with WFA/Basin's development of a spare margin for the SARR. It is not expressed as a percentage of *total* locomotive hours, as WFA/Basin calculated for variable cost purposes.

As to unutilized time, WFA/Basin disagree with recent Board precedent including such time in the spare margin, but present no basis for departing from that precedent. WFA/Basin merely quote the Board's decision in *WTU* for the proposition that locomotive idle time should not be included in calculating the SARR's locomotive spare margin. This proposition is totally irrelevant to the determination of a locomotive spare margin for variable cost purposes. The

---

{ } provides the following:

{

} BNSF Reply electronic wokpaper { }

[47] WFA/Basin Opening electronic workpapers "Loco Maint Adjust 2004.123."

SARR's spare margin is determined using a different methodology than is used to determine a railroad's real-world spare-margin.

BNSF's spare-margin evidence, which is based on data provided to WFA/Basin in discovery that shows BNSF's actual availability and utilization, is far superior to WFA/Basin's evidence, which is based on speculation and misapplication of BNSF's locomotive maintenance contracts.

(b) Development of BNSF Lease and Acquisition Expenses

The parties disagree about the proper calculation of locomotive lease costs. Mr. Fisher and Ms. Newland calculated an average locomotive lease cost based on the actual units used to power the Laramie River trains, weighted by hours in service. They applied this average cost to the locomotive cycle hours for Laramie River trains in the Fourth Quarter 2004. In this reply, they update those costs to reflect the cycle times to which the parties stipulated.

WFA/Basin used two different approaches to develop costs for leased locomotives. They used the actual lease payments for ten of the twenty locomotives that they identified as having been used in Laramie River service. For these ten units, WFA/Basin calculated the annual lease cost by weighting each locomotive's 2004 lease payment by the number of hours in Laramie River service in Third Quarter 2004.[48] For three of these units, however, WFA/Basin included no lease cost because the corresponding payment schedule indicated that the first payment was

[48] WFA/Basin used 3Q 2004 traffic data to determine locomotive hours for calculation of locomotive ownership costs. WFA/Basin Opening electronic workpapers "3Q04 loco hrs by unit.xls" and "Loco Cap Moba 3Q04.xls," worksheet "Leased Locos."

not due until 2005.[49] For the other ten units identified by WFA/Basin, WFA/Basin claimed not to have been provided the actual lease data, so they applied the average lease cost per locomotive hour that they calculated for the units for which they had data.[50] Since WFA/Basin included in their calculation of the average lease costs *zero* dollars for the units for which no payment was due in 2004, their average lease cost assumes that one-third of the locomotives required to power the Laramie River trains would be free.[51]

WFA/Basin's total exclusion of any costs for the newly leased units highlights one of the problems of using actual lease payments to calculate ownership costs. In prior rate cases, BNSF has explained that while lease payments schedules are frequently uneven, GAAP requires that BNSF account for these costs normalized over the life of the lease, i.e., the daily lease rental rate. In fact, BNSF regularly pays an amount into an accrual account based on the daily lease rental rates of the locomotives in its fleet. Further, BNSF reports these costs in the R-1 on this normalized basis. In other words, BNSF treats the normalized cost, not the actual cost, as the cost that was incurred in a given year its accounting system. Here, although the first lease payments on three of the units used in Laramie River service in Third Quarter 2004 were not due until 2005, upon delivery of these locomotives, BNSF began making payments into an accrual account based on the daily lease rental cost. WFA/Basin's assumption that use of these locomotives was "free" is obviously absurd and represents a windfall to the shipper.

---

[49] WFA/Basin Opening electronic workpaper "Loco Cap Moba 3Q04.xls," worksheet "Leased Locos" and BNSF Reply electronic workpaper "Locomotive Lease 20040010 (produced as BNSF-LR-CD0033).pdf."

[50] BNSF has since provided WFA/Basin with the lease payment schedules for these locomotives.

[51] WFA/Basin Opening electronic workpaper "Loco Cap Moba 3Q04.xls," worksheet "Leased Locos."

In any event, WFA/Basin's inclusion of zero lease costs for these locomotives in calculating an average locomotive lease cost is improper and understates BNSF's actual lease costs.

(14) Third-Party Loading And Unloading Expense

Mr. Fisher and Ms. Newland continue to use URCS system-average switching costs and do not include separately BNSF's payments to third parties for loading and unloading.

(15) User Responsibility for Freight Car Repairs

WFA/Basin wrongly exclude any cost for user responsibility freight car repair. While WFA/Basin supply most of the cars for the issue move and are generally responsible for their upkeep and maintenance, there are some repair and replacement costs that are BNSF's responsibility. Specifically, when shipper supplied cars are destroyed or damaged by train accidents, carrier mishandling of trains (such as damage to wheels when brakes are applied improperly), or are otherwise destroyed in the course of business, BNSF, as the car user, is responsible for the cost of repairing those cars or for reimbursing the owner if a car cannot be repaired (less salvage value).[52] As an example, BNSF is responsible for repairs to WFA/Basin's cars that were damaged in the May 14, 2005 derailment of a Laramie River train. In Ex Parte 334, *Car Service Compensation – Basic Per Diem Charge – Formula Revision in Accordance with the Railroad Revitalization and Regulatory Reform Act of 1976* (decided August 1, 1977), the Commission concluded that such user costs for private cars are 9.51% of total Account 314, Freight Train Car Repairs.[53] On opening, Mr. Fisher and Ms. Newland calculated the variable

[52] *Chicago, B.&Q.R. Co.v. New York, S.&W.R. Co.*, 332 I.C.C. 176, 189 (1968) ("Repairs made necessary by improper use and handling of the car are not considered ownership responsibility items, and the costs are customarily borne by the responsible railroad.").

[53] 358 I.C.C. 716, 804 (1977).

costs for this item by applying 9.51 percent of BNSF's URCS freight car repair unit cost per mile to the round-trip shipper car-miles for the Laramie River move. They continue to rely on that approach in this reply.

(16) Joint Facilities

As discussed above, in section IIA.1.c.(6)(a)(i), WFA/Basin improperly treat BNSF MOW costs for the Joint Line as joint facility costs and apply the wrong variability factor.

(17) Indexing

WFA/Basin further misstated BNSF's variable costs by incorrectly developing two of the index factors that it used to index the 2004 base year costs to the Fourth Quarter 2004. In calculating the index factor for "Other Indexable Expenses," WFA/Basin used the 2003 Producer Price Index (PPI) data when it should have used 2004 PPI data.

In calculating the fuel index, WFA/Basin totally disregarded the actual fuel costs for Laramie River trains that BNSF produced in discovery. Rather WFA/Basin indexed BNSF URCS 2004 system-average fuel costs to Fourth Quarter 2004 using BNSF's system-average fuel costs for Fourth Quarter 2004. Since the actual fuel costs for Laramie River trains were higher then BNSF's system-average fuel costs, WFA/Basin's approach understates BNSF's actual fuel costs and should be rejected.

2. Rate and Resulting R/VC Calculation

Mr. Fisher and Ms. Newland have updated the variable costs of the WFA/Basin traffic for Fourth Quarter 2004 to reflect where appropriate the stipulated traffic and operating characteristics, movement-specific crew-wage costs and BNSF's 2004 URCS. The following table shows the results. BNSF Reply Exhibit No. II.A-1 presents the cost summaries, and electronic workpaper "BNSF AEP REPLY PRG.123" contains the detailed calculations.

Table II.A-7
Summary of Variable Costs and Revenue To Variable Cost Ratios

Origin	Rate/Ton	Variable Cost/Ton	Revenue to Variable Cost Ratio
Northern PRB			
Dry Fork	$6.71	$2.04	328%
Eagle Butte	$6.72	$2.10	321%
Central PRB			
Caballo Rojo	$6.53	$1.85	353%
Cordero	$6.48	$1.83	354%
Southern PRB			
Jacobs Ranch	$6.25	$1.73	361%

B. QUALITATIVE MARKET DOMINANCE

BNSF does not contest WFA/Basin's evidence relating to the existence of effective intramodal or intermodal competition for the issue traffic movement. *See* WFA/Basin Opening Nar. at II-B-2 to 4.

III. STAND-ALONE COST

A. TRAFFIC GROUP

In this rate case, WFA/Basin are challenging the reasonableness of rates on coal traffic originating at Powder River Basin ("PRB") mines and moving to WFA/Basin's Laramie River generating station. WFA/Basin has developed a hypothetical rail carrier called the Laramie River Railroad ("LRR") that transports coal from October 2004 through September 2024. The LRR replicates approximately 220 route miles of existing BNSF lines within the PRB through Orin Junction and Wendover to Moba Junction, where Laramie River is located. WFA/Basin provided a schematic of the LRR's route at its Opening Exhibit III-A-1.

In 2005, the first full year of operation, WFA/Basin hypothesizes that the LRR will transport 205.3 million tons of coal.[1] The Laramie River generating station is the only destination directly served by the LRR. The vast majority of traffic handled by the LRR -- about 96 percent of WFA/Basin's estimated volume in 2005[2] -- is cross-over traffic.[3] WFA/Basin, like other recent complainants in stand-alone rate cases, are including huge quantities of cross-over traffic in the stand-alone traffic network and designing their stand-alone railroad ("SARR") to take advantage of arbitrary revenue allocation rules for cross-over traffic. As explained by Professor Kalt, complainants design the "SARR to capitalize on divisions that reward small SARRs with very large amounts of highly rated cross-over traffic from which they garner

[1] WFA/Basin Opening Nar. III-A-10, Table III-A-2.

[2] Specifically, 197 of the 205.3 million tons transported by the LRR in 2005 are handled in cross-over service. *See* WFA/Basin Opening electronic workpaper "LRR Traffic and Revenues_WFABasinOpening.xls," worksheet "ProjTonRev."

[3] "Cross-over traffic" is traffic currently handled by the incumbent railroad (here BNSF) that the complainants assume would move in interline service between the stand-alone railroad ("SARR") and the incumbent railroad. The cross-over traffic is handed off from the SARR to the residual incumbent at fictional interchange points. *See PPL* at 7, n.13.

hypothetical revenue divisions."[4] If the Board is going to allow the inclusion of cross-over traffic in the stand-alone network, as it has consistently done in recent cases, it must adopt an approach to determining revenues on cross-over traffic that avoids the opportunities for gaming that are embedded in the stand-alone cost ("SAC") analyses presented by complainants, including WFA/Basin in this case.

WFA/Basin assume that total volumes on the LRR increase by 7 percent from 205.3 million tons in 2005, its first full year of operation, to 219.7 million tons in 2023, the last full year of the discounted cash flow ("DCF") period.[5] WFA/Basin assume that total revenues will increase by a much higher percentage. Specifically, they project a 54-percent increase in revenues from $327.1 million in 2005 to $502.7 million in 2023.[6] While WFA/Basin's volume projections are flawed in some respects, it is their revenue evidence that contains the most serious flaws and results in a vast overstatement of revenues on traffic transported by the LRR.

With respect to volumes, the major flaw in WFA/Basin's evidence is the use of a published forecast rather than BNSF's own internal forecast of projected coal volumes which was prepared in the ordinary course of business for the period 2006 through 2009. WFA/Basin also incorrectly calculated the volumes of coal to a few particular plants in their traffic group and BNSF has corrected those volume errors.

WFA/Basin coal revenue assumptions contain several fundamental flaws. The most significant flaw relates to the calculation of revenues for cross-over traffic. As stated above, WFA/Basin has gamed the SAC test through its selection of cross-over traffic and allocation of

---

[4] Reply Statement of Joseph P. Kalt (hereafter "Kalt Reply Statement") at 10. The Kalt Reply Statement is included as Exhibit III.A-1.

[5] WFA/Basin Opening Nar. at III-A-10, Table III-A-2.

[6] WFA/Basin Opening Nar. III-A-19, Table III-A-6.

revenues for such traffic. If the Board is going to permit the use of cross-over traffic, Professor Kalt explains that the Board should apply contestable market principles and adopt an URCS-based measure of avoidable cost to determine the SARR's revenue for cross-over traffic.[7] While the Interstate Commerce Commission rejected a similar approach in its *Nevada Power* decision, Professor Kalt explains that there are several reasons why that decision should now be reconsidered.[8] If the Board rejects the avoidable cost approach for allocating cross-over revenues and continues to use the modified straight-mileage prorate formula ("MSP") which allocates through revenue to the SARR and residual incumbent based on the incumbent's relative costs for the two movement segments, the Board should at least use a mileage block other than the 100-mile block for originating or terminating coal because the 100-mile block substantially overstates the costs of originating and terminating unit coal train traffic in the western United States, particularly on the short cross-over coal movements on WFA/Basin's SARR. A 25-mile credit for coal traffic moving in shipper-owned cars and a 57-mile credit for coal traffic moving in railroad-owned cars more accurately reflects the origin/termination costs and should be substituted for the 100-mile block.[9]

A second major flaw in WFA/Basin's revenue projections results from the potential cross-subsidy that WFA/Basin has created by including revenues from very short-haul traffic that originates in northern PRB mines and exits the SARR at Campbell or Donkey Creek. BNSF proposes a simple approach to ensure that this short-haul traffic does not contribute revenues to pay for facilities it does not use.

[7] Kalt Reply Statement, BNSF Reply Exh. III.A-1 at 15-23.

[8] *Id.* at 23-25.

[9] BNSF has presented this alternative to the calculation of MSP origin credits in past cases that are pending before the Board.

Another major flaw in WFA/Basin's revenue projections is its failure to project rates for the issue traffic based upon the rates and rate escalation set forth in the common carrier pricing authority established by BNSF for the issue traffic. Contrary to WFA/Basin's claims, BNSF established the rates and rate escalation for the issue traffic in a commercially reasonable manner. WFA/Basin's failure to use the terms of the common carrier pricing authority to project revenues for the issue traffic is inconsistent with the governing statute and Board precedent which clearly provide the railroad with the authority to establish the common carrier rate. Other flaws in AEP Texas' revenue assumptions are discussed below in sections III.A.3.c and III.A.3.d.

BNSF's evidence in this section III.A. is supported by four witnesses. John C. Klick, a Senior Managing Director, and Benton V. Fisher, a Managing Director, in FTI's Economic Consulting Division, analyze WFA/Basin's volume and revenue assumptions, explain the flaws in WFA/Basin's approach, and sponsor evidence regarding BNSF's corrections to the volume and revenue assumptions. Professor Kalt sponsors evidence regarding the appropriate use of cross-over traffic in a SAC analysis and revenue allocation for cross-over traffic in the contestable market setting of SAC analysis. With respect to cross-over traffic revenue allocation, Messrs. Klick and Fisher sponsor evidence on the flaws in the MSP methodology used by WFA/Basin, and they sponsor the cross-over revenue allocation results using an URCS-based avoidable cost standard and the MSP approach using a 25-mile credit (in shipper-owned cars) for originating or terminating traffic rather than the 100-mile block used by WFA/Basin. Robert Brautovich, BNSF Assistant Vice President Coal Marketing West sponsors evidence regarding the commercial reasonableness of the rates established for the issue traffic. The qualifications and verifications for these witnesses appear in Section IV.

1. Stand-Alone Railroad Traffic

While BNSF is not excluding any of the traffic selected by WFA/Basin for its SARR network, it expresses strong concern with WFA/Basin's attempt to game the SAC test through its heavy reliance on short-haul cross-over traffic. If the Board is going to allow a complainant to use cross-over traffic in its SARR network, it must apply the principles of contestability underlying the *Coal Rate Guidelines*[10] ("*Guidelines*") to avoid the ridiculous conclusions and gaming opportunities seen in WFA/Basin's SAC analysis.

a. WFA/Basin's Heavy Reliance On Short-Haul Cross-Over Traffic Is Inconsistent With The Fundamental Economics Of The SAC Test

In this case WFA/Basin have designed a very short SARR that carries a traffic group consisting almost entirely of cross-over traffic. Indeed, the only traffic that is local to the SARR is the issue traffic moving to WFA/Basin's Laramie River generating station, which is less than five percent of the traffic selected by WFA/Basin.[11] This reliance on cross-over traffic is an effort to game the SAC test.

BNSF's witness Professor Joseph Kalt addresses the economic flaws in WFA/Basin's heavy reliance on cross-over traffic. He explains how cross-over traffic can be used to distort SAC results and he illustrates the distortions created by WFA/Basin's heavy use of cross-over traffic in this case. He nevertheless concludes that cross-over traffic can be used in a SAC analysis if it is treated consistent with contestability theory underlying the *Guidelines*.[12]

---

[10] *Coal Rate Guidelines Nationwide*, 1 I.C.C. 2d 520 (August 8, 1985).

[11] WFA/Basin Opening Nar. At III-A-4 to 5; WFA/Basin Opening electronic workpaper "LRR Traffic and Revenues_WFABasinOpening.xls," worksheet "ProjTonRev."

[12] The following discussion in this section and the discussion in portions of Section III.A.3.c are taken from Professor Kalt's Reply Statement, attached as Exhibit III.A-1. Professor

(i) The Appropriate Treatment of Cross-Over Traffic in SAC Analysis

Over the period since the adoption of the *Guidelines*, one of the most important, not to mention contentious, issues for the Board has been implementing the *Guidelines* in a way that is consistent with the underlying economics when it comes to the treatment of cross-over traffic. In this case, the LRR stand-alone railroad that has been hypothesized by the complainants is overwhelmingly dependent on revenue from cross-over traffic – traffic served end-to-end by the SARR accounts for less than five percent of the traffic on the LRR. The LRR consists of approximately 220 route miles of BNSF's PRB network. This portion of BNSF is densely traveled track that moves coal north and south out the PRB. The LRR traffic group serves Laramie River Station and over 75 other utility plant locations. In fact, the traffic at issue in this proceeding is the only end-to-end movement on the LRR, with the rest being cross-over traffic that is interchanged between the LRR and the residual BNSF.[13]

In other SAC cases, BNSF has argued that cross-over traffic should be excluded from the analysis because of the arbitrariness in allocating revenues between the SARR and incumbent.[14] This argument is compelling: With the design of the proposed SARRs largely at the discretion of the complainants, railroads have reason to be concerned that SARRs will be designed and

---

Kalt's statement also contains a discussion of the economics underlying the *Guidelines* that is not included in the narrative. *See* Kalt Reply Statement at 2-5.

[13] *See* WFA Opening Evidence III-H workpaper file "LRR Service Units.xls."

[14] STB Docket No. 42057, Public Service Company of Colorado D/B/A Xcel Energy v. The Burlington Northern and Santa Fe Railway Company, Reply Evidence and Argument of The Burlington Northern and Santa Fe Railway Company (April 4, 2003) at III-A-4 to A-21; STB Docket No. 41191 (Sub-No. 1), AEP Texas North Company v. The Burlington Northern and Santa Fe Railway Company, Reply Evidence of The Burlington Northern and Santa Fe Railway Company (May 24, 2004) at III-A-10 to A-16; STB Docket No. 42071, Otter Tail Power Company v. The Burlington Northern and Santa Fe Railway Company, Reply Evidence of The Burlington Northern and Santa Fe Railway Company (October 8, 2003) at III-A-6 to III-A-19.

revenue allocated on cross-over traffic in ways that violate statutory requirements by threatening the revenue adequacy of incumbent carriers and ultimately contradicting the guides to the public interest that emanate from the economics embodied in the original *Guidelines*. What do the economics of contestability tell us about the proper treatment of cross-over traffic?

b. Applying Contestability in the Railroad Context

It is perhaps a key difference between the legal and economics professions that the former appropriately tends to be rule-based (*i.e.*, takes rules from statutes, precedents, and common law and applies them to solve particular disputes), while economics, on the other hand, tends to be behavior-based (*i.e.*, given economic incentives of actors and certain conditions of their environment – say, no barriers to entry or exit – how will those actors behave?). The problem for the law (regulatory policy, in this case) is that *developing* the publicly interested rules and standards to be applied to a question such as the reasonableness of rail rates for coal transportation requires reference to the behaviorally derived standards of economics. This, in fact, was recognized in the process of developing the *Coal Rate Guidelines*.

The G*uidelines* confronted a vexing problem for a rules-based approach to maximum ratemaking: The ICC wanted to avoid having shippers pay for services and facilities that are not integral to providing them with the rail transportation service they need, but the economies of scale, scope, and density in efficient rail transportation inherently must be grounded on a network of considerable joint and common costs.[15] These joint and common costs are, by their very nature, *shared* by shippers. There is no non-arbitrary set of rules for allocating responsibility for these costs that does not make reference to shippers' valuation of (*i.e.*, demand for) rail service on the network. As the *Guidelines* correctly put it: "Any means of allocating

[15] *Coal Rate Guidelines* at 526.

these costs among shippers other than actual market demand is arbitrary and may not permit a carrier to cover all of its costs. This is because non-demand-based cost apportionment methods do not necessarily reflect the carrier's ability (or inability) to impose the assigned allocations and cover its costs [owing to differential shipper valuations and differential competitive constraints on carriers]."[16]

Contestability theory can potentially provide demand-based (*i.e.*, value-based) answers to problems such as the allocation of responsibility for joint and common costs because the economics of contestability are focused on a contest in which alternative railroads are competing to be the service provider to a group of customers by chasing the business of those customers. The railroad that can best satisfy customers' demands by offering service/rate combinations that are most attractive to customers and that generate enough total revenue to cover both variable and joint and common costs, such that the railroad is financially viable, "wins." Its rates then tell us the set of prices that are efficient, free of monopolistic abuse, free of cross-subsidy, and sufficient for revenue adequacy of the services subject to the competitive contest.[17]

These results follow from the competitive *behavior* captured by the economics of contestable markets. Competition compels conduct by sellers that is efficient and eschews cross-subsidies because such behavior by sellers is needed to hold down costs and be able to offer lower prices than others. Under conditions of free entry and exit by both the incumbent and new entrants, an incumbent's prices (rates) would not be able to exceed the stand-alone costs of an efficient entrant. If they did, the entrant would enter and the incumbent would suffer the

---

[16] *Id.*

[17] *See, e.g.,* Perry, Motty, "Sustainable Positive Profit Multiple-Price Strategies in Contestable Markets," *Journal of Economic Theory*, Vol. 32, No. 2 (1984), at 246-265.

consequences.[18] By the same token, competition compels negotiation of services and rates that pass through to consumers what otherwise might end up as monopoly returns to sellers because such negotiation is needed to have a chance of beating out freely entering and exiting competitors who are on the lookout for profit opportunities.

In short, publicly desirable attributes such as efficiency, revenue adequacy for the efficient, absence of cross-subsidy, and the like fall out of the economics of competitive behavior. Under properly implemented contestability via SAC analysis, the Constrained Market Pricing of the *Guidelines* does not attempt to impose such attributes in the form of disembodied rules or formulas. Rather, by using SAC analysis to figure out how competitive behavior by a SARR and an incumbent in a contestable setting would, for example, establish the prices for a SARR's cross-over service and, as discussed in Section III.H, the proper CMP revenue for that issue traffic, such desirable attributes are behavioral results, not rules. That is, the result of consistent application of the economics of contestability will be satisfaction of the *Guidelines'* stated objectives of efficiency, revenue adequacy for the efficient, absence of cross-subsidy, allocation of joint and common costs in accord with differential valuations, and shippers free from bearing the costs of services and facilities that are not integral to the service they want and use.

A properly framed SAC analysis compels the regulatory process to confront the increasingly salient question arising in rate proceedings: What kinds of SARRs would rational new entrants design in order to compete in the face of putatively excessive rates for challenged

[18] As a general matter, the contest's "winner" can be expected to have to offer prices that are no higher than the prices at which the next most efficient competitor could earn a normal profit (*i.e.*, its cost of capital) and, thus, willingly survive and supply customers. If the "winner" is, in fact, more efficient than the next closest rival, the winner can realize profits in excess of its cost of capital. Technically, such extra profits are not "excess" in the sense of being monopolistic returns; they are returns (rents) to superior efficiency.

traffic? Are SARRs that are overwhelmingly dependent on cross-over traffic credible entrants in a contestable market? Answers to these questions are to be found in the realization that, in a contestable market setting, SARRs would design – *and price* – efficient systems that would stand a chance of "winning" the competitions of a contestable market. This is the framework within which to analyze cross-over traffic. Instead, SAC cases have become dominated by rules that are not derived from behavior consistent with contestable markets. As a result, recent cases have seen SARRs that are implausible vehicles for entry into a rail market and that appear to be designed only to take advantage of the arbitrary revenue allocation rules.[19]

c. Contestability and the Inclusion of Cross-Over Traffic

If railroading were actually contestable, an actual SARR would be unconstrained by barriers to entry in designing its system and competing for whatever traffic it wished – including cross-over traffic. But it would do so in an economic context in which it could not rationally expect to win traffic for which it is not the efficient alternative or which is not priced lower than the next best alternative (as offered in the contest by the incumbent). In terms of cross-over traffic, this means that a SARR could expect to realize cross-over revenues only to the extent that it offers service to shippers that is more efficient than the service of the incumbent and that is priced so as to beat the best offer the incumbent can make in the contest for the portions of the moves at issue. On the other hand, if hypothetical SARRs designed for litigation purposes are not subjected by the regulatory process to these constraints of efficiency and competitive pricing, but can capture cross-over revenue in excess of the revenues that would be yielded by a contestable marketplace, complainants can be expected to game the system by designing SARRs

[19] *Duke/NS* at 25-30; *CP&L/NS* at 22; *TMPA* at 22-24; *PPL* at 7-8; STB Docket No. 42071, Otter Tail Power Company v. The Burlington Northern and Santa Fe Railway Company, Reply Evidence of The Burlington Northern and Santa Fe Railway Company (October 8, 2003) at I.12 to I.17, III.A-59 to III.A-68.

so as to maximize cross-over revenues and, thereby, minimize the revenues that the issue traffic must generate to leave the SARR economically sustainable as a stand-alone railroad.

Thus, inclusion of cross-over traffic is not theoretically "wrong" or inconsistent with contestability, but the proper regulatory treatment of cross-over revenues under SAC analysis must entail working through the economics of contestability to answer how behavior in contestable settings would set rates on cross-over traffic. The resulting rates *are* the revenues that a SARR could garner on cross-over traffic. That is, sound application of the CMP principles of contestability embodied in the *Guidelines* derives the *prices* a SARR could charge and still win the competition for its portions of cross-over moves, rather than allocating revenues through arbitrary rules that delineate divisions of through rate revenues between incumbent and SARR, vainly justified by arguments about cost attribution.[20]

The Board has recognized that a complainant can selectively choose highly rated (*i.e.*, high revenue and low cost) traffic on the SARR and rules-based revenue divisions to "game" the process[21] by designing a SARR to capitalize on divisions that reward small SARRs with very large amounts of highly rated cross-over traffic from which they garner hypothetical revenue divisions. With no effective means of determining whether a SARR's proposed portions of cross-over moves are more efficient than the incumbent and could actually win the contest for such portions of moves, prior SAC analyses have allowed for arbitrarily designed SARRs that have upwards of 80 percent to 90 percent of revenues attributable to cross-over traffic.[22] In such situations, the design of the SARR is not being driven by the economics of an efficient

---

[20] *Duke/NS* at 18-20.

[21] *CP&L/NS* at 31-32.

[22] *Duke/NS* at 17; *Xcel* at 13; *Duke/CSX* at 20.

competitor seeking to win by offering rates that beat the next best alternative, but by the incentive to include many short-haul movements that are highly profitable due to the arbitrary rules that have evolved to allocate revenue between the SARR and the residual incumbent.

As BNSF Reply Exhibit III.A-2 demonstrates, in the present case, the LRR represents a particularly simple SARR – but one which implicitly is held out by the complainants to be especially efficient in attracting very large volumes of cross-over traffic off of BNSF for portions of many, many moves. Each blue dot in Exhibit III.A-2 is either an electric utility that receives coal from BNSF or the point on the BNSF network where BNSF interchanges the traffic with another real world railroad. The blue line segment is the LRR, and the yellow line segments are the BNSF network that the LRR depends on to move its traffic toward its destination. While the LRR consists of only approximately 220 route miles, the residual BNSF that the LRR depends on is longer than 9,300 route miles, nearly 40 percent of the entire approximately 24,000 route-mile BNSF system.[23]

An illustration of the incentives and prospects for gaming of cross-over revenues is provided by the case at hand. In their opening evidence, the complainants have demonstrated that under their proposed revenue allocation to cross-over traffic, they are "gaming" – whether intentionally or not – with regard to traffic selection and revenue allocation. Even if the rates for movements of the challenged issue traffic were zero, the complainants' discounted cash flow model of SAC revenues and costs still implies that a significant reduction in the rates on the issue traffic is needed to bring LRR revenues in line with cost. This is not economically plausible. If the challenged issue traffic is making a minimal (or zero) contribution to revenue and overall SARR revenues still exceed costs, the implication is that a finding that, at challenged

[23] BNSF Reply electronic workpaper "residual BNSF segments.xls."

rates on the issue traffic, aggregate SARR revenues would exceed aggregate SARR costs. The called-for rate reduction is actually being driven by rules which over-allocate revenues to the SARR's cross-over moves (all non-issue traffic in the case of the LRR).

This is demonstrated in BNSF Reply Exhibit III.A-3, which extends WFA/Basin Opening Exhibit III-H-2, presented purportedly to show that "the maximum SAC rates under the percentage reduction method [of rate reduction on issue traffic] are driven principally by the starting rates [*i.e.*, the rates being challenged as excessive]."[24] BNSF Reply Exhibit III.A-3 examines the implications of starting rates that are well below the $3.38 rate which the complainants have asserted is the proper rate on the issue traffic (down from the $6.04 per ton rate, which the complainants wrongly assert is the challenged rate). At a rate between $3 and $4, the required reduction in rates under the complainants' SAC analysis and the percentage reduction approach is between 34 percent and 36 percent (according to the complainants' figures). Thus, if BNSF had developed a common carrier pricing authority with a rate of $3.38 per ton, this rate, too, could be challenged by the complainants under their model. Even with a starting rate on the issue traffic of *$0.00* per ton on the Laramie River Station movement, applying the revenue allocations and percent reduction method proposed by the complainants yields an implied reduction in the challenged rate of over 27 percent.

These results are not being driven by what the complainants term the "power of the pencil" – the ability of the railroad to set the rate (and starting point) for the issue traffic. The particular cross-over traffic selected by the complainants, coupled with allocation of revenue from cross-over traffic to the LRR and the proposed method of rate reduction, yields the nonsensical conclusion that the issue traffic should be free to the complainants (or, perhaps,

[24] WFA Opening Nar. at III-H-12.

negative, with BNSF paying WFA/Basin to let BNSF haul coal to Laramie River Station). This arises because the non-issue traffic – all of it cross-over – pays for essentially the entirety of the small SARR that has been proposed given the extant rules for allocating revenues to a SARR's cross-over traffic.

The sensitivity of the SAC test to the design of the SARR is illustrated in BNSF Reply Exhibit III.A-4. This exhibit demonstrates the effect of LRR network expansion would be on the revenues and costs of the LRR under the complainants' SAC analysis, cross-over revenue allocation, and proposed rate reduction methodology. If modest expansion of the LRR network leads to large changes in the relationship between SAC revenues and SAC costs, this suggests the opportunity for gaming and that the revenue allocation procedures of the complainants are leading to a distortion of the SAC results. In the case of the LRR, the distortion from the inclusion of cross-over traffic with revenue allocation that is not consistent with the economics of contestability can be quite large.

BNSF Reply Exhibit III.A-4 shows the effect of serially building out segments of the coal-carrying network adjacent to the LRR. The analysis incrementally adds lines out of the southern, eastern, and western ends of the LRR. Specifically, Scenario #1 extends the Guernsey line south through Northport to Sterling, an addition of 177 route miles. The excess of 2005 revenues over costs (under 100-mile modified straight mileage prorate – "MSP") declines from 42 percent under the original scenario to 27 percent under Scenario #1. Scenario #2 adds a segment to the network in Scenario #1, from Donkey Creek at the eastern end of the LRR through Alliance to Lincoln, adding another 587 route miles of heavily utilized track that is used to move coal. This expansion reduces the excess revenues to 3 percent. Finally, Scenario #3 adds 238 miles of track at the western part of the LRR from Campbell to Huntley (in addition to the track added in Scenario #1 and #2), and the excess revenues fall to less than 1 percent. Obviously, it has been in the complainants' interest to (carefully) design an especially small and cross-over-laden SARR.[25]

As discussed below, consistent application of the principles of contestability embraced by the *Guidelines* can avoid the nonsensical conclusions and opportunities for gaming that are embedded in the complainants' SAC analysis. In so doing, the public's interests can be protected by subjecting BNSF and other railroads to the discipline of competition that emanates from application of contestability to rail rates. The specific application of contestability theory to the cross-over traffic used in this case is discussed below at section III.A.3.d.

2. LRR Volumes

a. Projected Coal Volumes (4Q04 through 4Q05)

WFA/Basin assume that the LRR would begin operations on October 1, 2004. WFA/Basin use internal WFA/Basin forecasts maintained in the ordinary course of business that project tonnage receipts on a monthly basis to estimate volumes to the Laramie River and Leland Olds generating stations for the period October 1, 2004 through December 31, 2005.[26] WFA/Basin use internal BNSF forecasts maintained in the ordinary course of business that project volumes to specific plants on a monthly basis to estimate volumes to the plants included in the traffic group other than Laramie River and Leland Olds generating stations for that same

[25] BNSF Reply electronic workpaper "LRR adjacent segments.xls" shows the same build-out segment analysis using the MSP with a 25-mile origin/termination block rather than a 100-mile block. Although a distortion still exists, it is much less significant than the distortion resulting from use of the 100-mile block.

[26] WFA/Basin Opening Nar. at III-A-6.

time period.[27] BNSF accepts use of these internal forecasts to develop coal volumes for October 1, 2004 through December 31, 2005.

b. Projected Coal Volumes (2006 through 2024)

WFA/Basin includes 76 plants in the LRR rail network.[28] For plants other than Laramie River (which has a plant-specific forecast through 2014), WFA/Basin develop tonnage from 2006 through 2024 using PRB coal transportation forecast data published by the U.S. Department of Energy, Energy Information Administration ("EIA") titled *Annual Energy Outlook 2005 With Projections to 2025* (hereafter "AEO 2005").[29] Specifically, WFA/Basin take the 2005 tonnages for the plants in the traffic group and adjust them each year based upon the annual change projected by the *AEO 2005* forecast. WFA/Basin also caps annual deliveries to each plant in the traffic group at the greater of (1) either 2004 to 2005 tonnage deliveries (whichever is greater) to a plant, if such deliveries exceed the amount of coal necessary to operate the plant at 85 percent of plant capacity or (2) tonnage deliveries necessary to operate the plant at 85 percent capacity.[30]

BNSF does not accept WFA/Basin's use of the EIA's *AEO 2005* forecast to develop volumes for plants (other than Laramie River) from 2006 through 2009 because it is not the best evidence of volume growth from PRB origins to the plants. As explained below, the best evidence of record regarding future tonnages is BNSF's own Long Range Plan ("LRP"), a

[27] WFA/Basin Opening Nar. at III-A-6 to III-A-7.

[28] WFA/Basin Opening Nar. at III-A-3; WFA/Basin Opening Exh. III-A-2.

[29] WFA/Basin Opening Nar. at III-A-7.

[30] WFA/Basin Opening Nar. at III-A-8.

forecast prepared by BNSF in the ordinary course of business, for 2006 through 2009, the years it is available.

BNSF accepts WFA/Basin's use of EIA's *AEO 2005* forecast to project coal volumes for plants other than Laramie River from 2010 through 2024. It also accepts WFA/Basin's methodology for projecting volumes to Laramie River. Moreover, BNSF accepts WFA/Basin's caps on future volume growth, but corrects errors in WFA/Basin's calculation of the tonnage cap for some specific plants.

(i) <u>2006 Through 2009 Volumes -- Use of BNSF LRP</u>

BNSF's own internal forecast prepared in the ordinary course of business rather than the EIA's *AEO 2005* forecast should be used to develop volumes for the non-issue traffic plants in the traffic group from 2006 through 2009, the years for which the BNSF forecast is available. Since the LRR is hypothesized to carry BNSF coal traffic, BNSF's own forecast of future coal growth on the BNSF is a better predictor of future volume growth on the LRR than a national forecast that is not focused on BNSF. It represents BNSF's best estimate of its total annual coal volumes and revenues for the years 2005 through 2009. Indeed, WFA/Basin appear to acknowledge the validity of the BNSF LRP since it uses that forecast to determine the plants that will be added to or subtracted from the traffic group in the years 2006 through 2009.[31] Further, WFA/Basin use their own business forecast to project volumes to the Laramie River plant in those years.[32]

[31] WFA/Basin Opening Nar. at III-A-7 and n. 13. It is BNSF's LRP that WFA/Basin used as the source of the plants that BNSF expects to begin to serve and to stop serving from 2006 through 2009. *See* BNSF LRP, included in WFA/Basin's Opening workpapers Vol. 2, at 01021-01027. The list of customers/plants that BNSF expects to lose or gain, by year, appears on pages 01025-27.

[32] WFA/Basin Opening Nar. at III-A-6.

The Board has recognized that company forecasts prepared in the ordinary course of business are better predictors of the future for that company than published forecasts that are not focused on that company. Specifically, in *WPL*, when faced with the question of using the RCAF-U or Union Pacific's internal business forecast for projecting future operating expenses, the Board chose the company internal business forecast, stating:

> A forecast of future costs based on the RCAF-U—an historic index of costs for the entire rail industry—does not necessarily reflect the cost increases that a single carrier could expect to incur in providing service for a specific commodity. The inflation index in UP's business forecast, in contrast, relates specifically to coal movements in the EWRR traffic group and, therefore, should produce more reliable projections than the more broad-based RCAF-U. . . . Accordingly, we find that UP's business forecast is the best evidence of record for projecting future cost increases associated with the coal movements that would be handled by the EWRR.[33]

Table III.A-1 below compares the annual change in volume predicted by the EIA forecast used by WFA/Basin with that predicted by the BNSF LRP for the years 2006 through 2009.

[33] *WPL*, at 106; *see also Duke/NS* at 16.

Table III.A-1
Comparison of Annual Volume Change
Predicted by EIA *AEO 2005* Forecast
With BNSF LRP Forecast, 2006 through 2009

Year	EIA *AEO 2005* Forecast Annual Volume Change[34]	BNSF LRP Coal Forecast Annual Volume Change[35]
2006	1.3%	{ }
2007	4.2%	{ }
2008	3.8%	{ }
2009	4.2%	{ }
Cumulative Change	**14.2%**	{ }

Since the BNSF LRP is better evidence than the EIA's *AEO 2005* forecast of future volume growth on the LRR, BNSF uses the BNSF LRP to develop volumes for plants in the traffic group (other than Laramie River) in the years 2006 through 2009.

(ii) 2010 Through 2024 Projected Volumes

BNSF accepts WFA/Basin's use of EIA's *AEO 2005* forecast to project coal volumes for the years 2010 through 2024.

c. WFA/Basin's Errors in Calculating Volumes to Some Plants in the Traffic Group

WFA/Basin made errors in calculating the tonnages to the following plants:

1. { } Plant: While WFA/Basin attempt to use the BNSF 2004 plant-specific coal forecast to project volumes to particular coal plants in the fourth quarter of 2004, they erroneously fail to use the volumes from that forecast for the { } plant. Specifically, BNSF's 2004 plant-specific forecast predicts that { } tons will be

[34] WFA/Basin Opening electronic workpaper "LRR Traffic and Revenues_WFABasinOpening.xls," worksheet "EIA_AE02005_Tons."

[35] BNSF Reply electronic workpaper "BNSF LRP.pdf." BNSF used the { } contained in the LRP to determine the annual change in volumes for the LRR for 2006 through 2009.

transported to that plant in fourth quarter, 2004,[36] but WFA/Basin assume that { }tons will be transported to the plant at that time.[37] BNSF has corrected this error.[38]

2. { } Plant: WFA/Basin improperly calculated the tonnage cap for this plant by erroneously combining the FERC data for the plant in { } and a plant in { }.[39] Only the plant in { } should be considered for purposes of calculating the tonnage cap for this destination. BNSF has corrected this error and, as a result, reduced the tonnage cap for this plant from { } tons[40] to { } tons.[41]

3. { } Plant: WFA/Basin improperly calculated the tonnage cap for this plant by combining the tonnage forecast to move directly to the plant in *2004* with the tonnage forecast to move to the plant via a transload in *2005* (WFA/Basin should have used the tonnage forecasts for the same year).[42] By improperly mixing the forecasts for different years, WFA/Basin produced an annual delivery total for the plant that exceeded the combined

---

[36] BNSF 2004 Plan, by Month, included in WFA/Basin's Opening workpapers, Vol. 2, at 00959.

[37] WFA/Basin Opening electronic workpaper "LRR Traffic and Revenues_WFABasinOpening.xls," worksheet "SARR Traffic_2004."

[38] BNSF Reply electronic workpaper "LRR Traffic and Revenues_WFABasinOpening_BNSF Revised.xls," worksheet "SARR Traffic_2004."

[39] WFA/Basin Opening electronic workpaper "LRR Traffic and Revenues_WFABasinOpening.xls," worksheet "85% Capacity," rows 45-49.

[40] WFA/Basin Opening electronic workpaper "LRR Traffic and Revenues_WFABasinOpening.xls," worksheet "85% Capacity."

[41] BNSF Reply electronic workpaper "LRR Traffic and Revenues_WFABasinOpening_BNSF Revised.xls," worksheet "85% Capacity."

[42] WFA/Basin Opening electronic workpaper "LRR Traffic and Revenues_WFABasinOpening.xls," worksheet "ProjTonRev."

traffic forecast to { } in either year.[43] BNSF corrected this error by capping the traffic for both destinations at 2005 levels (which were greater than the 2004 total) and, as a result, reduced the tonnage cap for this plant from { } tons[44] to { } tons.[45]

d. Volume Summary

Table III.A-2 compares total LRR volumes developed by BNSF with those developed by WFA/Basin. The total volumes projected by BNSF are lower than those projected by WFA/Basin due to BNSF's modifications to WFA/Basin's volume assumptions as described in section III.A.2 above.

---

[43] *Id.*

[44] WFA/Basin Opening electronic workpaper "LRR Traffic and Revenues_WFABasinOpening.xls," worksheet "ProjTonRev."

[45] BNSF Reply electronic workpaper LRR Traffic and Revenues_WFABasinOpening_BNSF Revised.xls," worksheet "ProjTonRev."

Table III.A-2
LRR Volumes
Comparison of WFA/Basin and BNSF Volume for LRR
Net Tons in Millions

Year	WFA/Basin Opening	BNSF Reply	Difference
2004 (4Q)	48.3	48.4	0.0
2005	205.3	205.3	0.0
2006	207.5	207.8	0.4
2007	208.8	206.6	-2.2
2008	210.5	206.9	-3.6
2009	213.2	208.0	-5.2
2010	214.0	209.3	-4.7
2011	215.1	210.9	-4.2
2012	215.9	212.0	-3.9
2013	216.3	212.6	-3.7
2014	216.5	212.9	-3.6
2015	216.9	213.5	-3.4
2016	217.2	213.8	-3.3
2017	217.5	214.2	-3.2
2018	217.9	214.8	-3.1
2019	218.6	215.6	-3.0
2020	218.7	215.8	-2.9
2021	218.9	216.2	-2.7
2022	219.3	216.7	-2.6
2023	219.7	217.3	-2.4
2024 (1Q-3Q)	165.0	163.4	-1.7

Source: BNSF Reply electronic workpaper "LRR Traffic and Revenues_WFABasinOpening_BNSF Revised.xls."

BNSF shows its revised volume forecast for all WFA/Basin customers, by year, from 2004 through 2024 in BNSF Reply Exhibit III.A-8.

3. LRR Revenues

LRR revenues are affected by (1) the shippers included in the stand-alone traffic network, (2) the tonnage assumed to be handled by the LRR, (3) the rates that LRR shippers are assumed to pay, and (4) the revenues earned by the LRR on interline traffic. As shown above in section III.A.1, BNSF has not excluded any of the shippers that WFA/Basin has chosen to include in its traffic network. However, as shown above in section III.A.2, there are flaws in WFA/Basin's volume projection assumptions that result in some overstatement of volumes in the stand-alone network.

As shown below, the most significant flaws in WFA/Basin's SAC analysis relate to the revenues assumed to be earned on the issue traffic and the revenues assumed to be earned on the cross-over traffic. WFA/Basin's revenues are also overstated as a result of the projected rates that WFA/Basin assume the LRR shippers will pay.

a. Single-Line Revenues

The only movement on the LRR system that travels in single-line service on the LRR is the issue traffic moving to Laramie River.[46] This 8.3 million ton movement accounts for about four percent of the total LRR volume estimated by WFA/Basin for the year 2005, the first full year of operation.[47]

Effective October 1, 2004, BNSF posted a common carrier pricing authority that was applicable to the issue traffic. This pricing authority established three separate rates for the Laramie River movement -- one for south PRB mine origins, one for central PRB origins, and a third for north PRB origins.[48] As of 2007, the Laramie River CCPA sets these rates at $7.52 for south PRB mines, $7.90 for central PRB mines, and $8.13 for north PRB mines. *Id.* To avoid dislocations to WFA/Basin, BNSF decided to phase in these common carrier rates in three steps, with lower rates applicable in October 2004, somewhat higher rates applicable in 2006, and rates

[46] WFA/Basin Opening Nar. at III-A-11.

[47] WFA/Basin Opening electronic workpaper "LRR Traffic and Revenues_WFABasinOpening.xls," worksheet "ProjTonRev."

[48] BNSF Common Carrier Pricing Authority No. 90077 (hereafter "Laramie River CCPA"), included as WFA/Basin's Opening Exh. I-2.

set forth above applicable in 2007.[49] The common carrier pricing authority also contains a fuel surcharge as well as a rate adjustment provision based upon the RCAF-U (less fuel) that becomes effective January 1, 2008.[50]

WFA/Basin do not use the common carrier pricing authority to project revenues for the issue traffic. Rather, WFA/Basin take the rates established in the pricing authority as of October 1, 2004 and adjust them by the RCAF-U as of first quarter 2005.[51] WFA/Basin ignore the fuel surcharge set forth in the common carrier pricing authority.

BNSF does not accept WFA/Basin's methodology for projecting rates for the issue traffic. WFA/Basin's position is not only inconsistent with the governing statutory authority and Board precedent, it is based upon the erroneous assumption that the rates established in the common carrier pricing authority are not commercially reasonable.

(i) <u>WFA/Basin's Failure to Use Issue Traffic Rates Established by BNSF Is Inconsistent With Governing Law</u>

It is clear from the governing statute that the railroad has the authority to establish the common carrier rates under which traffic will be transported. Specifically, section 10701(c) provides in pertinent part "a rail carrier providing transportation subject to the jurisdiction of the Board under this part [49 USCS §§ 10101 et seq.] may establish any rate for transportation or other service provided by the rail carrier." 49 U.S.C. § 10701(c). Accordingly, the Board has stated that "under 49 U.S.C. 10701(c), a rail carrier is free to establish any common carrier rate it

---

[49] *Id.* at 1; Verified Statement of Robert Brautovich (hereafter "Brautovich VS") at 5-6. This verified statement is attached as Exhibit III.A-5.

[50] WFA/Basin's Opening Exhibit I-2, Laramie River CCPA at 1.

[51] WFA/Basin Opening Nar. at III-A-13 to III-A-14; WFA/Basin Opening electronic workpaper "LRR Traffic and Revenues_WFABasinOpening.xls," worksheet "MOBA_Rates."

chooses and has the rate freedom to increase its rates without precondition, except for the notice requirement of 49 U.S.C. 11101(c). A shipper may seek a Board determination of the reasonableness of the rates, but it may not withhold payment of a legally established rate. If the Board determines that the rates are unreasonable it can order reparations to make the shipper whole."[52] WFA/Basin's failure to use the common carrier rates established by BNSF contravenes the governing statute and Board precedent.

Moreover, in previous rate cases, the Board has stated that the common carrier pricing authority established by the rail carrier should be used to project revenues for the issue traffic.[53] WFA/Basin's failure to use the common carrier pricing authority is also inconsistent with this Board precedent.

(ii) Laramie River Common Carrier Rates Are Commercially Reasonable

WFA/Basin's purported justification for ignoring the common carrier pricing authority in projecting rates for the issue traffic -- that the rates are "outrageously high"[54] -- is also without merit. As an initial matter, even after the rate increase established by BNSF, the Laramie River common carrier rates, on a dollar per ton basis, are lower than almost all the rates that BNSF charges other customers for shipping coal out of the PRB.[55] Further, as explained by Bob Brautovich, BNSF Assistant Vice President, Coal Marketing West, who was involved in the development of the common carrier pricing authority for Laramie River, BNSF established those

---

[52] *AEP Texas* at 2.

[53] *Duke/CSX*, at 47-48; *TMPA*, at 27, n. 64.

[54] WFA Opening Nar. at I-4.

[55] Brautovich VS at 7.

common carrier rates at a commercially reasonable level.[56] In establishing those rates, BNSF considered a variety of commercial and market-related factors, including the historical circumstances of the Laramie River movement, the shipper's demand for the service and its ability to pay, the movement characteristics, the demand for PRB rail services and PRB coal, and PRB operating conditions. *Id.*

A review of these factors led BNSF to conclude that a significant increase in the expired Laramie River contract rate was warranted. Specifically, in making that review, BNSF considered the following factors: (1) the expired contract rate was significantly below market because {

},[57]

(2) when the Laramie River contract rate expired, demand for PRB coal as well as transportation services out of the PRB was very high,[58] (3) Laramie River's position in the marketplace showed that it was doing very well compared to other coal-fired plants with which it competed,[59] (4) Laramie River's financial condition was so strong that it could absorb a substantial increase in transportation costs without causing hardships or dislocation,[60] and (5) {

[56] Brautovich VS at 2.

[57] Brautovich VS at 2-3.

[58] Brautovich VS at 3.

[59] Brautovich VS at 4-5.

[60] Brautovich VS at 5.

}.[61]

Given its review of the market, BNSF concluded that the common carrier rates published by BNSF for 2007 -- $7.52 for south PRB mines, $7.90 for central PRB mines, and $8.13 for north PRB mines -- were commercially reasonable.[62] To avoid dislocations, BNSF decided to phase in these common carrier rates in three steps -- the first step in October 2004, the second step in 2006, and the third step in 2007. WFA/Basin improperly ignore the common carrier rates established in the pricing authority for 2006 and 2007, and instead apply the RCAF-U to the three October 2004 rates (which they incorrectly refer to as the base rates) as of January 2005.[63]

(iii) WFA/Basin's Failure to Consider the Fuel Surcharge in the Common Carrier Pricing Authority Is Without Merit

WFA/Basin also ignore the fuel surcharge set forth in the common carrier pricing authority established by BNSF, instead calculating issue traffic SAC revenues based on the October 2004 Laramie River common carrier rates adjusted by quarterly changes in the RCAF-U.[64] They argue that the LRR DCF results show that these rates are unreasonable and, therefore, the adjustments to the common carrier rates established by BNSF, including the fuel surcharge, are also unreasonable.[65] They present no other basis on which the Board should find BNSF's fuel surcharge unreasonable. WFA/Basin's argument is without merit.

---

[61] *Id.*

[62] Brautovich VS at 5-6.

[63] WFA Opening Nar. at III-A-14; WFA/Basin electronic workpaper "LRR Traffic and Revenues_WFABasinOpening.xls," worksheet "MOBA_Rates."

[64] WFA/Basin Opening Nar. at III-A-14.

[65] *Id.* at I-31.

The fuel surcharge incorporated into the pricing authority is based upon the commercial realities of today's market. It is intended to allow BNSF to recover its fuel costs given the extreme volatility in the price of fuel and the fact that existing cost indexes with fuel components have not been adequate to address this volatility in the fuel market.[66] As shown in Table III.A-3, BNSF's fuel costs associated with Laramie River service in particular and PRB coal transportation in general increased approximately { } percent in the last calendar year:

Table III.A-3
BNSF Fuel Prices per Gallon at Moba Junction (Laramie River) and Guernsey

Period	Moba Jct. Price	Cumulative % Difference	Guernsey Price	Cumulative % Difference
1Q 2004	{ }		{ }	
2Q 2004	{ }	{ }	{ }	{ }
3Q 2004	{ }	{ }	{ }	{ }
4Q 2004	{ }	{ }	{ }	{ }

Source: BNSF Reply electronic workpaper "III-D-1 MOBA-FUEL (for Index&QRS price).xls", produced in discovery as "MOBA-FUEL.xls".

Further, the RCAF-U has not kept pace with BNSF's dramatic increases in fuel costs, as shown in Table III.A-4:

Table III.A-4
Changes in RCAF-U

Period	RCAF-U	Cumulative % Rate Change
1Q 2004	1.025	
2Q 2004	1.033	+0.80%
3Q 2004	1.071	+4.49%
4Q 2004	1.097	+7.02%

Source: BNSF Reply electronic workpaper "2004 RCAF Rate of Change.xls".

BNSF therefore included a fuel surcharge in the Laramie River common carrier pricing authority, all its other common carrier pricing authorities for coal (except TMPA and Xcel where

[66] Brautovich VS at 6.

the STB set the rates) and in its recent coal transportation contracts.[67] The surcharge is based on changes in the monthly U.S. Retail On-Highway Diesel Fuel ("HDF") Price published by the EIA.

To implement the effect of the fuel surcharge in the SAC analysis, it is necessary to project future changes in fuel prices. But the reason that BNSF implemented a fuel surcharge in the first place was the unpredictability of fuel prices. For that reason, BNSF implemented a retroactive mechanism for the fuel surcharge in its common carrier pricing authorities and contracts. BNSF has concluded that the best way to reflect the effect of the fuel surcharge in the SAC calculations is to use a comparable index forecast for both operating costs affected by fuel price changes and projected revenues to compensate for those changes. In this way, revenues and costs will change on parallel tracks, which is the basic concept underlying the fuel surcharge. Since the DCF uses a forecast of the RCAF index to project future changes in operating costs, BNSF uses a forecast of the fuel component of the RCAF index (*i.e.* RCAF Fuel) to project the fuel surcharge for the issue traffic and all other common carrier pricing authorities and contracts with a fuel surcharge, as identified by WFA/Basin.[68]

Table III.A-5 presents the results of BNSF's corrections to WFA/Basin's calculations of the issue traffic revenues.

---

[67] Brautovich VS at 7.

[68] WFA/Basin electronic work paper "LRR Traffic and Revenues_WFABasinOpening.xls," worksheet "ProjTonRev."

Table III.A-5
Comparison of WFA/Basin and BNSF Issue Traffic Revenues (Millions)

Year	WFA/Basin Opening	BNSF Reply	Difference
2004 (4Q)	$13.1	$14.2	$1.1
2005	$50.9	$54.7	$3.8
2006	$50.6	$60.9	$10.4
2007	$51.1	$69.3	$18.2
2008	$52.5	$71.3	$18.8
2009	$53.5	$72.7	$19.2
2010	$54.5	$74.3	$19.8
2011	$55.3	$76.3	$21.0
2012	$56.7	$78.4	$21.7
2013	$58.2	$80.8	$22.7
2014	$59.1	$82.7	$23.6
2015	$61.3	$86.6	$25.3
2016	$62.7	$89.6	$26.9
2017	$64.2	$92.7	$28.5
2018	$65.7	$95.8	$30.1
2019	$67.3	$99.1	$31.8
2020	$68.9	$102.8	$34.0
2021	$70.5	$106.7	$36.2
2022	$72.2	$110.7	$38.6
2023	$73.9	$114.8	$41.0
2024 (1Q-3Q)	$56.7	$89.3	$32.6

Source: BNSF Reply electronic workpaper "LRR Traffic and Revenues_WFABasinOpening_BNSF Revised.xls," worksheet "Local Rev Comp."

b. Division Of Revenues -- Existing Interchanges

There are no coal movements on the LRR that fall into this category because LRR interchanges no traffic at existing BNSF interchanges.[69]

c. Divisions Of Revenue -- Cross-Over Traffic

(i) WFA/Basin Have Not Met Their Burden Of Justifying Their Proposed Use of MSP As A Cross-Over Revenue Allocation Procedure

If inclusion of cross-over traffic in a stand-alone traffic group were appropriate, the complaining shipper would nonetheless have the burden of justifying the particular revenue

[69] WFA Opening Nar. at III-A-15.

allocation procedure that it proposes. An unsupported assumption of revenue contribution from cross-over traffic is not consistent with the *Coal Rate Guidelines*.[70] In this case, the inclusion of revenue from cross-over traffic movements is a primary determinant of the outcome of the SAC analysis. WFA/Basin had the burden of showing that the revenue they claim on cross-over traffic movements is in fact available to the SARR.

WFA/Basin have not met their burden of showing that the MSP methodology with a 100-mile origination/termination block is appropriate for developing cross-over traffic revenue for the LRR. They first attempt to justify their use of this methodology by observing that "[t]he Board has consistently applied the MSP method, or its predecessor, the Modified Mileage Block Prorate method ("Block Methodology"), in the last nine SAC cases" and that "[t]hese decisions include calculations of cross-over divisions on many of the same PRB traffic routings that WFA/Basin have included in the LRR."[71]

While the Board used the MSP revenue allocation approach in *Xcel, Duke/NS, CP&L/NS*, and *Duke/CSX*, the Board has not adopted MSP as the "preferred" or standard approach to allocating revenue on cross-over traffic movements. The Board's statement in *TMPA* that "[w]e

---

[70] *OPPD*, 3 I.C.C.2d at 142-43. Specifically, in *OPPD*, the ICC stated:

> The Burlington Northern first challenged the absence of off-line costs and revenues in its evidence to the Administrative Law Judge. Omaha Power responded with exhibits that purported to show the total costs and revenues (including auxiliary costs and investments) under the "Appendix F" methodology for a group of unit train coal shippers constituting part, but not all, of the original CMV traffic. OPPD also filed an engineering cost workup for the same group of shippers. *Both of the rebuttal workups indicate a complete recovery of all stand-alone costs, including auxiliary costs and investments.*

Id. at 142 (footnotes omitted; emphasis added).

[71] WFA/Basin Opening Nar. at III-A-17.

have not adopted a single, preferred procedure for developing revenue divisions on cross-over traffic" remains true today.[72] WFA/Basin cannot simply rely on the Board's use of MSP in other cases (in which neither WFA/Basin nor BNSF were parties) as a substitute for meeting their burden of showing that the claimed revenue is in fact available to the SARR and that the allocation procedure adopted "produce[s] the fairest division between the carriers."[73]

WFA/Basin's second attempt to justify the use of the MSP, by claiming that the results purportedly conform to interline divisions in real world railroading, similarly lacks merit.[74] As explained below, real world interline divisions are irrelevant to the issue of revenue divisions for cross-over service by a SARR.

(ii) Shortcomings In The MSP Procedure

There are several shortcomings in the MSP procedure.

(a) The 100-Mile Credit For Originating And Terminating Traffic In MSP

First, the 100 mile credit that MSP applies for the origination and termination of a coal unit train substantially overcompensates the originating and terminating carrier for the costs actually incurred to provide those services in the PRB where no gathering operations are required and where mine loop tracks and flood-loading are commonplace. The use of a 100-mile block in a SAC case involving PRB coal transportation therefore continues to provide a gaming incentive to the complainant to load the SARR with relatively short-haul movements. As shown above in section III.A.1.a, WFA/Basin's over-allocation of revenue to the cross-over traffic leads to the

---

[72] *TMPA* at 31, n. 74.

[73] *Duke/NS* at 22.

[74] WFA Opening Nar. at III-A-18 and WFA Opening Exhs. III-A-3, III-A-4.

nonsensical result that a rate for the issue traffic set at $0.00 per ton would be found to be too high.

As described below, if the MSP methodology were to be used to allocate revenue on cross-over traffic, the Board must reduce the gaming incentives associated with the use of cross-over traffic by revising the 100-mile credit to reflect more accurately the costs to originate and terminate the types of traffic included in a SARR. However, BNSF's proposed avoidable cost methodology (discussed below) obviates the need to use mileage block credits as a surrogate for origination and termination costs.

(b) The Need To Account For Traffic Density

Second, the MSP approach used by the Board in *Duke/NS* and adopted by WFA/Basin in their Opening Evidence also does not take account of traffic density. It implicitly assumes that the need for and ability of cross-over traffic movements to cover costs is the same on relatively high-density and relatively low-density portions of cross-over movements. In fact, the railroad cost structure is affected by economies of density, which result in the widely observed phenomenon that average total costs per unit of traffic decrease as traffic densities increase. By ignoring economies of density, MSP over-allocates revenues to those portions of cross-over movements on high-density segments relative to movements over less dense segments of cross-over routes. This is contrary to the Board's objective that the revenue allocation for cross-over traffic "produce the fairest division between the carriers." *Duke/NS*, at 22.

It is beyond dispute that the railroad industry cost structure – and hence the ability of rail traffic to cover costs – is affected by economies of density. The existence of economies of density was a key feature of the railroad industry cost structure addressed by the ICC in its *Coal Rate Guidelines*:

> Railroads exhibit significant economies of scope and density. . . . Economy of *density* refers to the fact that greater use of the fixed plant results in declining average cost. Thus, the marginal cost of rail service is less than the average cost, because the fixed plant is used in a progressively more efficient manner.
>
> The differential between marginal costs and average costs cannot be assigned directly to specific movements by any conventional accounting methodology. Hence, we refer to it as the "unattributable costs."

Guidelines, 1 I.C.C.2d at 526. More recently, the Board took note of how economies of density affect cost recovery in its *PPL I* decision:

> [I]t is preferable to allocate the capital carrying charges on a level annual basis *to reflect the declining capital investment needed per unit of output as the rail system is used more intensively. This pattern of capital recovery reflects the production economies that characterize the economic structure of the rail industry.*

PPL I, at 12 n.21 (emphasis added).

The existence of different traffic densities on different portions of cross-over routes affects the ability of the SARR and the residual incumbent to cover costs on those segments because "[g]reater use of fixed plant results in a declining average cost." *Guidelines*, 1 I.C.C. 2d at 526. Thus, all else being equal, the more traffic that moves over a given line segment, the lower the cost that needs to be recovered on average from each individual ton-mile to recover the total costs of the segment.

(iii) Real World Interline Divisions Are Irrelevant[75]

Regarding the complainants' second defense of their use of the MSP methodology for allocating cross-over revenues, the Board has correctly found that real world divisions do not

---

[75] This section is taken from pages 14-15 of Professor Kalt's Reply Statement, BNSF Reply Exh. III.A-1.

provide useable guides to determining rates and revenues for cross-over service by a SARR.[76] Under the *Guidelines*, the Board seeks the answers of a contestable marketplace to the questions of cross-over pricing and revenues. Real world divisions generally are not the product of a contestable marketplace: railroads' notable fixed and sunk costs make the real world preeminently distinguishable from the hypothetical contestable world of free entry and exit for a SARR and an incumbent. Indeed, it is the absence of the conditions needed for contestability that motivate rate regulation via the CMP approach of the *Guidelines*. If railroads were actually contestable in the real world, there would be no need for SAC cases; contestable entry would regulate rates. Instead, real world divisions are the result of negotiations between railroads with substantial sunk costs, often in bilateral or very small numbers contexts, and in bargaining settings that come nowhere near reproducing the workings of a contestable setting. WFA/Basin's purported real world evidence is not relevant here for determining revenues on cross-over traffic consistent with the *Guidelines*.

(iv) BNSF Proposes the Use of An Approach Consistent With Contestability Theory to Determine Cross-Over Revenues For the SARR

As an alternative to the MSP methodology, BNSF proposes an approach to calculating the revenues that a SARR would earn on cross-over traffic based on the theory of contestability that is the foundation of the *Guidelines*. BNSF's witness Professor Kalt addresses the economic rationale for BNSF's contestability-based approach.[77]

---

[76] In previous cases, the Board has said that the revenue allocation for cross-over traffic should reflect the relative cost of providing the service. *See Duke/CSX* at 22 and *Duke/NS* at 20.

[77] The following discussion in this section is taken from Professor Kalt's Reply Statement, attached as Exhibit III.A-1.

(a) The Economics of Contestability Applied to Cross-Over Traffic

The appropriate starting point for determining revenue on cross-over traffic is found in the economics of the competition that would take place between a residual incumbent and a SARR under simulated conditions in which neither is subject to barriers to entry or exit (*i.e.*, conditions of contestability). Such competition yields the straightforward result that prices that the "winner" can charge in a contest in a contestable market will not exceed the avoidable costs of the next best alternative (*i.e.*, the loser). In the SAC context, the next best alternative to the SARR's carriage of its portion of a cross-over move on its system is the carriage of that same portion of the cross-over move by the incumbent on its system.

Contestability in this setting proceeds as if both the SARR and the incumbent shout out offers to shippers for the portion of the cross-over traffic that is brought into the contest by the SARR's selection of its system design and the SARR's selection of the traffic it wants to chase (*i.e.*, its marketing strategy). One can readily ask, as the SARR and the incumbent confront shippers in the contestable marketplace and shout out their offers for the contested portion of the cross-over move, how low will their competition take their prices? Neither party will go lower with its offered rate than the costs it can avoid if it is the loser in the competition: If it offered rates lower than its avoidable costs, it is at risk of winning business on which it will incur a loss. Thus, for example, if one of the railroad's avoidable costs on the contested portion of the cross-over traffic is $32 and it were to win the competition with an offered rate of $30, it would suffer a $2 loss. That railroad is better off dropping out of the competition when rates are pushed even the slightest amount below $32. This means that the lower (avoidable)-cost contestant can win the competition by lowering its rates to an amount essentially equal to the higher (avoidable) cost competitor less one cent. Thus, if the lower-cost competitor has avoidable costs of, say, $28, it can win the hypothetical competition by offering a rate one cent below $32 (*i.e.*, the avoidable costs of the less efficient competitor).

This outcome of a contestable market for contested portions of cross-over traffic is, of course, the familiar result of competition and the reason the public has an abiding interest in competition: In well-functioning competitive markets, the efficient contestants win and drive out the inefficient contestants, and prices are driven down to no more than the costs at which the next best alternative could survive. In the context of competition over contested portions of cross-over moves, the direct implication of the economics of contestability embodied in the *Guidelines* is that the revenue properly allocated to a SARR under coherent SAC analysis on cross-over traffic is the avoidable costs of the incumbent that are associated with that traffic. If the SARR is actually more efficient at carrying the contested portion of cross-over moves than the incumbent, the SARR will thereby appropriately be treated as the "winner" in the SAC analysis, and it will capture contributions to the joint and common costs of its own network. Such contributions are precisely those that competition under contestability yields. In terms of the hypothetical above, the SARR is most efficient (with costs of $28), and the disciplining forces of competition yield it a rate of $32 (less one cent) upon winning the contest for the contested portion of the cross-over move. Upon losing the competition when rates get even the slightest below the incumbent's assumed avoidable costs of $32, the incumbent is compelled to exit the service which was contested. The incumbent exits without constraint under conditions of contestability – *i.e.*, the incumbent is assumed to have no sunk costs on the contested service that would otherwise induce it to stay in the competition at rates below $32.

The foregoing outcomes of competition for cross-over traffic obviously yield *prices* which are, at the same time, the proper *revenue allocations* under the contestability embodied in the *Guidelines.* That is, working out the economics of contestability answers the cross-over revenue allocation question.[78] The resulting prices (rates) and revenue allocations are the product of the relative efficiency of the SARR and its choice of target traffic. Thus, if the SARR chooses to design and market itself (as the LRR has done in the present case) so as to compete in the contestable market of SAC analysis for only a portion of a route and only a portion of the traffic on that route,[79] it thereby chooses to compete against the avoidable costs of the incumbent on the corresponding portion of the route for the corresponding portion of the traffic on that route. This is the unavoidable contest that is created.[80]

If, on the other hand, the complainant chooses to design a SARR to capture through moves of non-issue traffic, SAC analysis permits the complainant to include the incumbent's full through revenue of the movements in the SAC calculations. When a through movement is

---

[78] At the same time, answering the question of proper cross-over traffic revenues for the LRR answers the question of the proper revenue for the issue traffic without the need for additional rules regarding the reduction of rates (see discussion below in Section IIII.H).

[79] In the case of the LRR, the only through movement carried by the SARR is the issue traffic to Laramie River Station. WFA/Basin Opening Nar. at III-A-11. All other traffic is cross-over, and the LRR does not provide service to several non-utility customers, which originated over { } tons on BNSF in 2004. *See* WFA Opening electronic workpaper (Section III-H) "LRR Service Units.xls" and WFA Opening electronic workpaper (Section III-A-2) "Methodology To Exclude BNSF Customers From LRR Traffic Group.xls" and "04COALOD_WITH_NULL_REVISED_ROUTES.xls."

[80] In fact, the economics that generate the conclusion that a contestable market for cross-over moves would yield prices (rates) and corresponding revenue allocations to a SARR that are no higher than the incumbent's avoidable costs are analytically parallel to those that govern the pricing in so-called "rat tail" settings, which the Board has encountered frequently in the context of merger analyses. In those analyses, the Board has properly recognized, and the federal courts have endorsed the economic reasoning, that a railroad serving a portion of a through move will win the competition against a railroad proposing to carry the entirety of a through move when the former railroad's costs are less than the latter's avoidable costs on the contested portion of the move; and that, upon winning, the former railroad will realize a division which is not greater than those avoided costs. *See Western Resources, Inc., v. Surface Transportation Board and the United States of America*, 109 F.3d 782, 786-788 (D.C. Cir. 1997).

included in the SARR, the rates for the movement are known – they are the rates charged by the incumbent. Since the purpose of the SAC analysis is to determine whether the *rates charged* by the incumbent on the traffic included in the SARR are generating a cross-subsidy, and the rates for through movements are known, no further inquiry needs to be made into the revenues available to the SARR for a through move. In the case of cross-over traffic, however, there is no pre-existing actual rate for the part of the through movement that the SARR proposes to carry. Thus, the revenue that would be available to the SARR for that cross-over movement has to be determined by reference to economic principles. The revenues thereby attributed to the SARR are not a proxy for a through rate: they are rates that would be expected in a contestable market. Therefore, they are not eligible for a rate deduction; they are already at the level set in the contestable market. (As discussed below, this is why the principle of contestability allows the Board to resolve both the cross-over revenue and rate reduction questions using contestability theory.)

Note the proper, anti-"gaming" incentives that flow from this application of the economics of contestability. Assuming a SARR that is rational and attempting to be the efficient winner of the competitions it enters, the reasonable conclusion to be drawn when the SARR chooses to compete only for cross-over non-issue traffic (as the LRR has here) is that the SARR has concluded that a build-out to capture the through revenues on non-issue traffic would not be the most efficient way of entering the market. On the other hand, this outcome regarding SARR revenues implies that a complainant would have corresponding incentives to "build" (propose) more extensive SARRs if and when it is efficient to do so (*i.e.*, when such a SARR would be in the public interest).

Observe that these outcomes are also consistent with the Board's desire for "simplification" of SAC computations that does not penalize the shipper. In fact, these outcomes offer only a win/win situation for the proponent of a SARR. Assuming that the SARR would be more efficient than the incumbent and, therefore, that the SARR's incremental costs would be lower than the incumbent's avoidable costs, the SARR has two ways to benefit from economies of scale, scope, and density. Without expanding the SARR configuration beyond the lines necessary to serve the issue traffic, a SARR proponent can nonetheless generate net revenues that offset the costs of building and operating the issue traffic line segments by adding cross-over traffic and earning such revenues in excess of its incremental costs. On the other hand, if the shipper believes that even larger amounts of net revenues can be generated by expanding the SARR configuration to handle some or all of the cross-over traffic movements from their BNSF origin to their BNSF destination, and obtaining the incumbent's full revenues for those movements for which the SARR replicates the entirety of the incumbent's current service, the shipper is free to take this action instead. In neither case is the shipper's SAC result saddled with potential *losses* that might be generated if it were forced to expand the SARR by building line segments that generate incremental revenues below the forward-looking costs of constructing and operating these lines.

It is consistent with sound and feasible regulatory policy that a SARR that builds a larger system in order to carry non-issue traffic on its through moves (when such traffic would otherwise be cross-over on a less extensive SARR) garners the incumbent's *rates* on such through traffic. This approach is consistent with rebuttable presumptions that the SARR which is designed to compete effectively for through movements of non-issue traffic has costs on through moves of that traffic which are less than extant rates (otherwise the SARR would not have any incentive to be designed to contest for such traffic). For a SARR (like the LRR) that chooses *not* to compete for through movements of non-issue traffic, but only for cross-over portions of through moves, it is appropriate that that SARR garner no more than the full avoidable costs (taking none to be sunk) of the incumbent since that allocation is the allocation a competitive contestable market would make in a contest for cross-over traffic, and there are no extant rates to turn to when a SARR enters and proposes to take only cross-over portions of through moves currently being carried by the incumbent.

In the case of both the SARR that elects to contest only a portion of a move (*i.e.*, seeks cross-over traffic) and the SARR that builds out its system further and elects to contest all of the traffic on a complete route, the SARR is a replacement for the incumbent on the movements included in the SAC analysis. As the Board properly recognized in *Nevada Power*,[81] the incumbent should be accorded no competitive advantage due merely to its incumbency (*i.e.*, having already sunk much of its costs in building its network and serving a particular route and/or traffic). The economics of contestability accord no such advantage to the incumbent since, like the SARR, the incumbent has no barriers to exit or entry due to irretrievably sunk costs, and the incumbent is as footloose as the SARR. If the incumbent loses all of the traffic on a portion of a cross-over move in the contest with the SARR, the incumbent is treated as exiting and harboring no protections from sunk costs *on the contested traffic*. Accordingly, the incumbent avoids all of the fixed and variable costs of the contested traffic; that is, the incumbent hypothetically eschews the building of tracks duplicative with those of the SARR and the SARR replaces the incumbent. If the incumbent loses part of the traffic on a portion of a cross-over move, it still must build its line to serve the traffic for which the SARR does not offer

[81] *Nevada Power*, 10 I.C.C.2d at 265-267.

service,[82] but the incumbent continues to be treated as exiting the service of the contested traffic and harboring no protections from sunk costs *on the contested traffic.* In that case, the SARR replaces the incumbent entirely (in the sense of a full accounting of avoidable costs) for the traffic that the SARR does win.

This approach fully addresses concerns the Board/Commission has about entry barriers.[83] Under the economics of contestability set out above, the competition that is simulated does not involve the real world incumbent, with all of its sunk costs, barriers to exit, and the like. Rather, the revenue determination on cross-over traffic under contestable conditions is derived assuming that the incumbent is, like the SARR, free to enter and exit and has no more of a foothold than the SARR. As part of the contest, no rates are being reduced to preclude entry by the SARR. In the case of cross-over traffic, there are no rates to reduce since none exist. The purpose of the contestability analysis is to determine what the rates for the cross-over movement would be in a true contestable market.

The allocation to the SARR of revenue for cross-over traffic on the basis of the incumbent's avoidable costs arises not because the incumbent is protected by barriers to entry or exit or has some other first-mover advantage. Rather, the allocation on the basis of the incumbent's avoided costs arises because the free-to-enter-and-exit "incumbent" enters the simulated contestable market with its own system (without the facilities needed to handle the

---

[82] It is appropriate to require that the incumbent be assumed to have to build its portion of the cross-over route under the circumstances (as with the LRR) in which a SARR markets its service to only a portion of the potential cross-over traffic. To do otherwise is to imply that the potential cross-over traffic that the SARR elects not to serve would be left without service altogether. Allowing a SARR to implicitly deny and destroy service to a certain class of customer is not consistent with the use of CMP and SAC analysis as protectors of the public interest, since the public has an interest in maintaining service to customers that the SARR eschews. This issue is prominent in the case at hand. *See* note 79 above.

[83] *Nevada Power*, 10 I.C.C. 2d at 265-266.

traffic that is the subject of the contest) and that system's particular configuration, joint and common costs, and efficiency attributes. Under the contestability approach set out here, cross-over revenues for the SARR are kept consistent with the economics of contestability that generate the winning rates in the particular contests that the SARR "wins" given both the system design of the incumbent and the system design of the SARR. Accordingly, in the simulated competition invoked by the *Guidelines*, the SARR completely replaces the incumbent in those services and on those routes where the SARR "wins," and the contestability standard establishes revenues for the SARR on cross-over moves under the assumption that none of the incumbent's costs of serving the cross-over traffic are sunk. That is, SARR revenue is established at the level of *all* of the incumbent's *avoidable* costs of serving the cross-over traffic.

In short, revenues that are retained by the incumbent for off-SARR portions of the cross-over movements under consistent application of the *Guidelines* are not reflective of an incumbency advantage. Rather, the contest set up by the SARR's choice of system design and marketing strategy leaves the incumbent as the efficient – and necessary – provider of rail service that interlines with the SARR as the residual incumbent's portion of cross-over moves. As a direct consequence, setting SARR cross-over revenues at the level of the costs avoided by the incumbent which the SARR replaces carries proper incentives for complainants when designing their SARRs. It is the nature of the Board's approach to SAC analysis that a complainant is allowed to assert that its SARR can and would win the contests for the traffic it elects to serve.

Concomitantly, with respect to cross-over traffic, the SARR should be allowed to collect no more than the competitive prices that a contestable market would set for the SARR's portion of cross-over moves. Permitting the SARR to capture more than the avoided costs of the incumbent on the SARR's portion of cross-over traffic amounts to allowing the SARR to capture above-competitive rates for the traffic it elects to serve. The consequence is then what economics refers to "cross-subsidy" of the challenged *issue* traffic: above-competitive pricing of cross-over traffic cross-subsidizes issue traffic by reducing the amount of revenue a SARR needs to collect from the issue traffic. In fact, it is such cross-subsidy inherent in the present complainants' MSP revenue allocation methodology that produces the results of BNSF Reply Exhibit III.A-3, in which the complainants' SAC analysis implies the need for a reduction in the rate for BNSF service to Laramie River Station even if that rate were to start out at $0.00. The complainants' SAC analysis and requested rate reduction are rife with cross-subsidy.

Appropriately applied SAC analysis under the contestability conditions envisioned by the *Guidelines* can allow a SARR to pursue any traffic it desires with any system it desires. Allowing such freedom, however, must be accompanied by an ability to realize revenues on non-issue cross-over traffic that do not exceed the SARR's competitor's (*i.e.*, the residual incumbent's) avoided costs of serving such traffic. Consistent application of these economics of contestability obviously would provide complainants with incentives to design efficient SARRs where such systems have realistic possibilities of winning competitions and where resulting revenues allow the SARR to cover its costs and contribute to its joint and common costs precisely to the extent that it could hypothetically offer the shipping public more efficient service. The complainants would also have incentives to "build" larger and more efficient SARRs to the extent that such systems were truly more efficient and the SARR could convert cross-over traffic to complete routings on its own system. In fact, complainants would have incentives to build and market efficient systems, whatever the size, since efficiency improvements would be the source of net revenue contribution from non-issue traffic. In so doing, they would more closely adhere to the goals and the standards of the *Guidelines.*

(b) Use of URCS-Based Standard As Contestability Standard for Measuring Avoidable Costs

At least in the case of the LRR, with its relatively simple route structure and operations, the contestability standard for determining SARR cross-over revenues (*i.e.*, BNSF's avoidable costs on cross-over traffic "won" by the SARR) is amenable to relatively straightforward numerical calculation. An URCS-based standard for measuring avoided costs can provide a reasonable starting point for determining proper cross-over revenues "earned" by the LRR.[84] An URCS-based measure of avoidable costs avoids problems of sunk costs that might otherwise be a source of advantage to an incumbent. By including a component of fixed costs that vary with traffic, the implementation of an URCS-based measure of avoided costs would preclude the incumbent from exploiting any advantages created by its sunk costs.

Utilizing URCS-based measures of avoidable costs, Mr. Fisher and Mr. Klick calculated that the revenues which the LRR would receive under the *Guidelines'* contestability standard for cross-over rates and revenue allocation would be considerably smaller than the revenues that the LRR receives under the arbitrary cost allocations presented by WFA/Basin. As discussed more fully below, given the LRR's costs and the rates and revenue allocations the LRR would receive under the contestability standard, receipt by the LRR of BNSF's challenged rates on the Laramie River Station movements would not allow the LRR to fully cover its stand-alone costs.

[84] The URCS-based standard provides substantial revenue recovery for road property and maintenance of way on high density lines such as the part of the BNSF network included in the LRR.

BNSF is aware that the ICC previously felt it was rejecting the application of contestable market principles in establishing revenues on cross-over traffic in its *Nevada Power* decision, but BNSF believes the Board should reconsider that decision for at least four important reasons. First, as the Board recognized in the *Duke/NS* and *CP&L/NS*[85] decisions and as discussed above, significant potential for shipper "gaming" of the stand-alone cost test has emerged as a result of shippers' extensive reliance on cross-over traffic. It is reasonable to infer that at the time it rendered *Nevada Power*, the ICC did not anticipate that shippers would make such extensive use of cross-over traffic.[86] As evident in the case of the LRR, the overwhelming reliance on cross-over traffic and prior approaches to revenue allocation for cross-over traffic has led to significant "gaming" of the stand-alone cost test.

Second, because Union Pacific prevailed in the *Nevada Power* proceeding, it had no opportunity to appeal the ICC's decision that (1) permitted cross-over traffic, (2) employed a modified mileage prorate in estimating divisions on cross-over traffic, and (3) rejected Union Pacific's testimony on the application of contestability principles as the basis for establishing revenue divisions on cross-over traffic. This absence of framework and opportunity to more fully consider the economics embodied in the *Guidelines*, coupled with the evolution of cases and case strategies, has made cross-over matters particularly controversial and contentious. It is appropriate at this time to examine and apply the underlying economics that the *Guidelines* are based upon.

[85] *Duke/NS* at 22; *CP&L/NS* at 21-22; and *Nevada Power*, 10 I.C.C. 2d at 265-266.

[86] In the *Nevada Power* case, the parties had the opportunity to supplement the record. Nevada Power proposed expanding the scope of its SARR to build out more of the UP's system, UP objected, and the Commission ultimately considered the original SARR the complainant proposed. Given the unique circumstance surrounding the structure of the SARR in *Nevada Power*, it is understandable that the Commission expressed skepticism toward UP's arguments concerning cross-over traffic. *Nevada Power*, 10 I.C.C. 2d at 265, n. 12.

Third, in terms of implementing an URCS-based measure of avoidable cost, the ICC had an incorrect view in *Nevada Power* that such a measure would "allow for only a minimal contribution to NPRR's joint and common costs."[87] URCS assumes that 50 percent of road property costs vary with traffic volume.[88] Thus, on a high density line, the portion of avoidable costs that relates to investments in right-of-way and track can be quite large.

Fourth, in a related vein, the ICC explicitly stated when it adopted the *Guidelines* in 1985 that it might be necessary to revisit issues associated with the application of CMP principles as it gained additional experience:

> We [ ] consider the guidelines to be a workable approach to the case-by-case resolution of rate complaints in market dominant situations. We realize, however, that the workability of the guidelines is most appropriately evaluated in light of experience. The test of experience is appropriate because CMP is based on rather sophisticated economic theories which require careful interpretation and application. We may well find, after some experience with applying the guidelines, that modifications are needed to make this approach to maximum rate regulation for coal traffic fully workable.[89]

As shippers have come to rely so extensively on cross-over traffic – and to argue, blatantly, that they are entitled to the benefits of economies of scope, scale, and density of the SARR network without having to pay the full costs of the incumbent's feeder lines necessary to move traffic to and from the SARR (thereby generating the economies of scope, density, and scale)[90] – two jugular issues of SAC application have emerged: (1) how to establish the appropriate revenue

[87] *Nevada Power,* 10 I.C.C. 2d at 266.

[88] BNSF Reply electronic workpaper 'Bnsf809phseiidl.y04," worksheet "worktable D1."

[89] *Coal Rate Guidelines* at 525.

[90] *See e.g.*, STB Docket No. 42071, Otter Tail Power Company v. The Burlington Northern and Santa Fe Railway Company, Complainant's Rebuttal Evidence, Narrative (April 29, 2004) at III-A-12.

for cross-over traffic movements, and (2) how to calculate a reduction in issue traffic rates if the Board should find SARR revenues are in excess of SAC. The contestable market principles Professor Kalt has outlined address *both* of these issues at once, using the single unified economic theory that is the foundation for CMP. The Board is accordingly in the position of being able to more adequately address both of these areas by employing the economics of contestability called for by the *Guidelines*.

As noted above, application of the economics of contestable markets to the issue of cross-over traffic results in each cross-over movement (or group of movements) earning revenues equal to the incumbent's avoided costs (*i.e.*, long-run incremental costs). To the extent the SARR is more efficient than the incumbent in handling the SARR's cross-over portion of the through movement, it gets to keep the full benefit of that superior efficiency, *even if that revenue is well in excess of the SARR's own long-run incremental costs.*[91] Such excess of SARR revenues over SARR long-run incremental costs means each cross-over traffic movement (or group of movements) generates contribution that can be used to reduce the forward-looking costs of constructing and operating the network that is required in order for the SARR to handle the issue traffic. This means that any resulting excess of SARR revenues over SAC constitutes a direct reduction in the revenues generated by the issue traffic (with the jurisdictional threshold serving as the minimum rate that can be prescribed for the issue traffic). No further "allocation" or "revenue reduction" approach is required.

In short, application of contestability principles to establish revenue on cross-over traffic movements, as described above, is consistent with the theory underlying the ICC's development

[91] If it were the case that the SARR was not more efficient than BNSF in handling the SARR portion of a cross-over movement, then contestability principles would argue that the SARR could not effectively compete for that movement.

of CMP as protection of the public interest; serves to assign to cross-over traffic the maximum amount of revenue the SARR could achieve on this traffic if it operated in a real, competitive, contestable market; and serves to address two of the most vexing issues facing the Board, today, regarding the application of the stand-alone cost test. In the face of these results, continued use of economically arbitrary rules for cross-over revenue allocation, with their attendant impact on rates through rate reduction rules that are not derived from the economic principles embedded in the *Guidelines*, is unwarranted.

(c) Results of Application of URCS-Based Standard For Measuring Avoidable Costs

Messrs. Klick and Fisher have used an URCS-based standard for measuring avoidable costs and, thus, determining the cross-over revenue allocations that will be allocated to the LRR. Specifically, they calculate BNSF's URCS variable costs (based on the 2004 URCS submitted with the variable-cost evidence accompanying this Reply filing[92]) for the LRR cross-over traffic, using the *Ex Parte* No. 399 costing assumptions employed by the Board in preparing its costed waybill.[93] BNSF calculated the 2004 URCS costs for the 4Q2004 LRR shipments, and also calculated the URCS costs for the 2005 shipments that WFA/Basin assume will continue through the duration of the LRR operations (*i.e.*, 2024). In order to determine the appropriate level of revenues available to the SARR for 2006-2024, Messrs. Klick and Fisher escalate the avoidable

[92] BNSF Reply electronic workpaper "BNSF URCS 2004.zip."

[93] BNSF Reply electronic workpaper "LRR Coal Move Inputs.xls," worksheet "Traffic Summary."

costs per ton calculated at BNSF's 2004 cost levels by the RCAF adjusted for productivity ("RCAF-A") to reflect an appropriate estimate of BNSF's avoided costs in subsequent years.[94]

Table III.A-6 presents the revenue-allocation results for 2005, comparing WFA/Basin's MSP application with 100-mile blocks to BNSF's use of avoidable costs.

Table III.A-6
Comparison of 2005 Revenue Allocations for Cross-Over Traffic

		Revenues (Millions)	
	Length of Haul	**WFA (MSP)**	**BNSF (Avoidable Cost)**
Via Campbell			
LRR	33	$18	$10
Residual BNSF	991	$140	$149
Via Donkey Creek			
LRR	28	$105	$54
Residual BNSF	976	$810	$862
Via Guernsey			
LRR	120	$137	$101
Residual BNSF	1,034	$673	$709
Other			
LRR	116	$13	$7
Residual BNSF	60	$10	$17
All Cross-Over			
LRR	**68**	**$274**	**$172**
Residual BNSF	**978**	**$1,633**	**$1,736**

*Revenues reflect WFA's application of 100-mile blocks and do not include fuel surcharge

Source: BNSF Reply electronic workpaper "LRR Traffic and Revenues_WFABasinOpening_BNSF Revised.xls," worksheet "Comp."

(v) An Alternative Method For Allocating Cross-Over Revenues Is Use of MSP With 25-Mile Blocks for Originating/Terminating Traffic

BNSF believes that the URCS-based standard for measuring avoidable costs is the appropriate standard for calculating cross-over traffic revenues on the LRR for the reasons

[94] BNSF Reply electronic workpaper "LRR Traffic and Revenues_WFABasinOpening_BNSF Revised.xls," worksheets "2005 SARR Traffic" and "ProjTonRev."

explained above. However, should the Board determine that it will apply an MSP methodology to allocate through revenues based on the incumbent's relative costs for on-SARR and off-SARR movements, the Board must modify the origin/termination blocks used in the MSP methodology to reflect more accurately the incumbent's relative on-SARR and off-SARR costs. The evidence clearly supports a 25-mile origin/termination block (for movements in shipper-owned cars) as more appropriate than a 100-mile block.

In recent decisions, the STB has recognized a need to modify the method by which it allocates revenues for cross-over traffic. Specifically, in *Duke/NS* and subsequent decisions, the STB "re-examined" the issue, re-affirmed its rejection of market-based rates as "inappropriate for a SAC analysis," and adjusted its prior approach to allocating revenues between the SARR and residual incumbent to "better approximate the relative costs the defendant railroad incurs to haul this traffic over each of the segments."[95] While the substitution of actual line-haul miles for 100-mile line-haul "blocks" corrects one source of distortion and opportunity for gaming in a SARR presentation, there remains an inconsistency in recent applications of the MSP algorithm. Specifically, as explained above, the use of a 100-mile credit for originating coal unit trains at mines in the PRB is unjustified and at odds with efforts to "better approximate the relative costs." In this case, as in two other PRB coal cases pending before the Board, BNSF presents clear and compelling support for modifications to the generic 100-mile credit, answering the call for "any better evidence as to the costs of [originating and terminating] functions."[96]

The source of the 100-mile origin and termination blocks used in the MSP formula is the Board's Carload Waybill Sample, which divides revenue on interline moves using an assumption

---

[95] *See, e.g., Duke/NS* at 25, *Xcel* at 17.

[96] *Xcel II* at 8.

that the originating and terminating carriers each receive an additional revenue credit that is the equivalent of the revenue associated with 100 miles of line-haul movement. This credit is expressly intended to compensate the originating and terminating carrier for the costs of providing originating or terminating service.[97]

However, this 100-mile block was calculated to apply across all shipments, whether the traffic moves in single-car, multiple car, or unit-train shipments, whether the traffic moves in shipper-owned or carrier-owned equipment, and regardless of the traffic type. The 100-mile block may reasonably reflect the origination and termination costs of a "system-average" carload. However, its use in a SAC case to allocate revenue on cross-over traffic creates a perverse incentive for the complainant to load the SARR with short-haul coal traffic because the relative costs of originating and terminating a carload of coal in unit-train service are considerably lower than the costs of originating or terminating a "system-average" carload of traffic.

Coal unit trains consist of continuously cycling sets of cars moving between an established origin and an established destination. The essence of coal unit-train service, and one of the main factors driving railroads to provide unit-train service, is the elimination of costs associated with the switching that would otherwise be incurred to create a trainload from numerous individually originated cars or smaller blocks of cars. To originate a unit-train carload, an existing set of preconfigured cars is sent to a mine, where the entire set of cars is moved through the loading facilities. In the PRB, coal is automatically dumped into each car

[97] The documentation explaining the Waybill calculations states that the origin carrier receives "an additional [100-mile] block to allow for the pick-up and switching expense," and the destination carrier receives "an additional [100-mile] block to allow for delivery expenses." *User Guide for the 1996 Surface Transportation Waybill Sample* at 8-33. The cited excerpt is included in BNSF's Reply electronic workpapers at "user guide.pdf."

from a loading tipple as the car moves through the loading dock. All of these operations are carried out on mine-owned loop tracks, so the originating railroad does not even own any road property associated with the origination of the coal. At most PRB mines, the loading operations are carried out by third-party loading crews that specialize in these activities. The loading operations in the PRB have become highly efficient due to the large volume of trains that load at individual mines. Unit trains that regularly consist of 115 to 130 carloads can be loaded at PRB mines in a matter of hours.

The Board's URCS costing methodology recognizes the efficiencies and lower costs associated with originating and terminating unit trains. *Ex Parte No. 270 (Sub-No. 4)* prescribes specific adjustments to various URCS system-average costs to account for these efficiencies. Incorporating these adjustments for unit-train traffic results in substantial reductions to system-average costs.[98]

In prior cases, BNSF has urged the Board to adopt an alternative 25-mile origin credit for movements in shipper-owned cars and a 57-mile credit for railroad-car movements. These alternative blocks were calculated based on a 2002 URCS. BNSF Reply Exhibit III.A-6 at page 1 presents the calculations that derive these alternative origin/termination credits. BNSF also used BNSF's 2004 URCS to confirm that these credits are a far more accurate reflection of origin/termination costs for use in the SAC analysis.[99]

---

[98] *Ex Parte No. 270 (Sub-No. 4), Investigation of Railroad Freight Rate Structure Coal,* 344 I.C.C. 71, 227 (decided Dec. 3, 1974).

[99] BNSF Reply electronic workpaper "LRR Traffic and Revenues_WFABasinOpening_BNSF Revised MSP.xls," worksheet "Rev Comp." Use of the 2004 URCS results for shipper cars would serve to reduce the LRR's division, and using the slightly higher credit for shipments in railroad-provided cars would produce a minimal increase in LRR revenues, approximating one-half of one percent.

BNSF carried out three additional analyses to confirm the reasonableness of these mileage blocks for unit-train carloads. First, BNSF examined the relationship between unit-train line-haul costs and unit-train origination costs as determined by URCS. [100] The only notable difference in the URCS treatment of line-haul costs for unit trains as compared to shipments of single and multiple carloads is that URCS eliminates intertrain and intratrain (I&I) switching. Since I&I switching is not a particularly large cost, there is little difference between the URCS line-haul costs for unit-train carloads and the URCS line-haul costs for single and multiple train carloads. As such, the relationship of line-haul costs to origination costs for unit-train carloads – and therefore, the appropriate size of the mileage block for unit train originations – is not different that the relationships between the origination costs presented in BNSF Reply Exhibit III.A-6.

Second, BNSF examined the variable-cost evidence that BNSF submitted in this proceeding for the Laramie River movements to determine the relationship between line-haul costs and origination and termination ("O&T") costs. BNSF Reply Exhibit III.A-6 at page 2 sets out a movement-specific analysis showing that the variable origination costs for the Laramie River movements using BNSF's evidence are the equivalent of 21-23 miles of line-haul costs.[101]

Third, BNSF examined WFA/Basin's stand-alone cost evidence that was submitted in this proceeding for the LRR to determine the relationship between their line-haul costs and O&T costs. Stand-alone costs are not, strictly speaking, relevant to determining the *incumbent's* relative origin and line-haul costs, but they provide another set of data showing how inaccurate

---

[100] BNSF Reply electronic workpaper "Term Cost Single vs Unit Train.123," worksheet "linehaul.

[101] BNSF Reply electronic workpaper "Term Cost Single vs Unit Train.123," worksheet "Move Spec BNSF."

the 100-mile block is when used in unit coal train operations. In the first step of this analysis, BNSF identified those specific costs that are associated exclusively with line-haul and over-the-road movements, and those costs that are associated with O&T activities at either the mine origins or the Laramie River plant. In this analysis, BNSF excluded costs associated with functions that support the overall movement, including, for example, activities performed in the LRR yards such as train inspection and locomotive servicing and General and Administrative costs.[102] After determining the separate totals for line-haul and O&T costs, BNSF then developed the corresponding number of car-miles and O&T events, and determined the relative O&T cost to line-haul cost. BNSF Reply Exhibit III.A.6 at page 3 shows that WFA/Basin's 2005 stand-alone operating and construction cost evidence indicates that their LRR cost for originations or terminations is the equivalent of about 14 miles of LRR line-haul costs.[103]

Taken together, these three analyses demonstrate that, rather than the 100-mile MSP block used by WFA/Basin, an origination credit of 25 miles would be more appropriate for unit-train coal moved in shipper cars (the predominant type of traffic on the LRR) and a credit of 57 miles would be more appropriate for unit-train service in railroad-provided cars.

Revision of the origin/termination credits used in MSP would reduce the incentive a complainant has to game SAC results through the selection of short-haul, cross-over traffic. The size of the credit for originations and terminations is of lesser importance in a case where the SARR carries cross-over traffic for a significant portion of the through movement. Indeed, in the *TMPA* case, where BNSF sponsored an adjustment to the O&T credits similar to the 25-mile

[102] By excluding the costs that were not exclusively line-haul or O&T, BNSF effectively assumed that these costs should be allocated in the same proportion between the two categories (line-haul and O&T) as were the assigned costs.

[103] BNSF Reply electronic workpaper "LRR rev split.xls."

credit adjustment proposed here, the Board found that the adjustment had no significant effect on the revenue calculations.[104] That was a case, however, where the SARR carried most of the cross-over traffic on average for a considerable portion of the move. Where, as here, the SARR is assumed to carry much of the cross-over traffic for a very short distance, an overstated origination credit gives the SARR a disproportionate amount of revenue and therefore provides a strong incentive for complainants to game the SAC test through the use of short-haul traffic.

In fact, WFA/Basin's selection of the LRR traffic group and network configuration sets a particularly clear example of the distortion created by use of an overstated origination credit. The average length of haul of all LRR cross-over traffic is less than 70 miles.[105] In fact, WFA/Basin assume that more than one-third of all traffic will travel no more than 30 miles on-SARR.[106] BNSF Reply Exhibit III.A-7 summarizes the results of WFA/Basin's revenue allocation for this very short haul traffic. This very short-haul traffic averages 15.6 miles on the LRR, which is less than 10 percent of the total LRR network constructed to provide the issue traffic service. For this traffic, WFA/Basin's use of an overstated 100-mile O&T credit accounts for *87 percent* of the cross-over revenue allocated to the SARR[107] and suggests a SARR revenue division of 12.2 percent for the LRR handles only 1.8 percent of the total miles.[108]

---

[104] *TMPA* at 31.

[105] BNSF Reply electronic workpaper "LRR Traffic and Revenues_WFABasinOpening_BNSF Revised MSP.xls," worksheet "Comp."

[106] *Id.*

[107] 100 / (100 + 15.6) = 0.87. *See also* BNSF Reply Exh. III.A-7.

[108] BNSF Reply Exh. III.A-7; BNSF Reply electronic workpaper "LRR Traffic and Revenues_WFABasinOpening_BNSF Revised.xls" worksheet "Comp."

Table III.A-7 shows that using the adjusted mileage credits described above results in a 35-percent reduction in cross-over revenues for the LRR's coal unit-train traffic.

Table III.A-7
Comparison of 2005 Revenue Allocations for LRR Cross-Over Traffic

			LRR Revenues (Millions)		
LRR Off Junction	**Net Tons (Millions)**	**LRR Haul (Miles)**	**100-Mile O&T Credit**	**25-Mile O&T Credit**	**% Difference**
Campbell	15	33	$18	$10	-46%
Donkey Creek	97	28	$105	$51	-52%
Guernsey	80	120	$137	$105	-24%
Other	5	116	$13	$14	4%
All Cross-Over	**197**	**68**	**$274**	**$179**	**-35%**

*Revenues do not include fuel surcharge
Source: BNSF Reply electronic workpaper "LRR Traffic and Revenues_WFABasinOpening_BNSF Revised MSP.xls," worksheet "Comp."

d. Other

This section describes the flaws in WFA/Basin's projections of revenue on non-issue traffic. First, it describes the errors in WFA/Basin's approach for calculating future revenues for non-issue traffic.[109] BNSF already described the flaws in WFA/Basin's approach for projecting revenues for the issue traffic in section III.A.3.a above. As indicated above, to be consistent with the application of contestable market theory to develop revenues for cross-over traffic using the incumbent's avoidable costs, BNSF forecasts revenue growth for the LRR cross-over traffic

[109] One flaw in WFA/Basin's revenue calculations is their decision to use two different sources to determine the mines that will originate coal for particular shippers in the SARR traffic network. Specifically, for plants other than Laramie River and Leland Olds, they use BNSF's forecasted mine origin for revenue allocation purposes, while they use the historical mine origin for purposes of their operating plan. *See* WFA/Basin electronic workpapers "LRR Traffic and Revenues_WFABasinOpening.xls" and "LRR Operating Statistics.xls." However, since this error does not substantively affect the revenue calculations for non-issue traffic, BNSF accepts it for purposes of this reply filing.

using the RCAF-A.[110] To forecast cross-over traffic revenues for its alternative presentation of revenues under adjusted MSP, BNSF incorporates the changes discussed below. In addition, BNSF modifies the fuel surcharge applied to non-issue traffic transported under contract or a common carrier pricing authority with a fuel surcharge.

(i) Projected Revenues for Non-Issue Traffic

(a) Projected Coal Revenues (4Q04 through 4Q05)

WFA/Basin use internal BNSF forecasts maintained in the ordinary course of business that project revenues to specific plants on a monthly basis to estimate revenues to the plants included in the traffic group From October 2004 through December 2005. *See* WFA/Basin Opening Nar. at III-A-15. BNSF accepts use of these internal forecasts to develop coal revenues for October 1, 2004 through December 31, 2005.

(b) Projected Coal Revenues (2006 through 2024)

Subsequent to 2005, WFA/Basin project through revenues for the plants in the traffic network using the following methodology. For the two movements in the LRR network where the STB has prescribed maximum rates, WFA/Basin apply the prescribed rates during the term of the prescription.[111] BNSF accepts this aspect of WFA/Basin's revenue projection procedure but updates it to use the prescribed rates in the latest STB decisions.[112]

---

[110] BNSF Reply electronic workpaper "LRR Traffic and Revenues_WFABasinOpening_BNSF Revised.xls," worksheet "ProjTonRev."

[111] WFA/Basin Opening Nar. at III-A-16.

[112] BNSF Reply electronic workpaper "LRR Traffic and Revenues_WFABasinOpening_BNSF Revised MSP.xls," worksheet "ProjTonRev."

For movements that were covered by a contract or pricing authority subsequent to 2005, WFA/Basin calculate through revenues until the end of the contract or pricing authority using the escalation provision in the contract or pricing document.[113] BNSF accepts this aspect of WFA/Basin's revenue projection procedure.

Subsequent to the expiration of the contract, pricing authority, or STB rate prescription (hereafter collectively referred to as "Pricing Documents"), WFA/Basin use EIA's *AEO 2005* forecast to project future revenues for LRR movements.[114] Specifically, WFA/Basin take the projected revenues for the plants at the expiration of the pricing document and adjust them each subsequent year of the DCF period based upon the annual change projected by the *AEO 2005* forecast.

BNSF does not accept WFA/Basin's use of the EIA's *AEO 2005* forecast to develop revenues for plants from 2006 through 2009 because it is not the best evidence of revenue growth from PRB origins to the plants. As explained below, the best evidence of record regarding future revenues is BNSF's own LRP, a forecast prepared by BNSF in the ordinary course of business, for 2006 through 2009, the years it is available.

BNSF accepts WFA/Basin's use of EIA's *AEO 2005* forecast to project coal revenues for the years 2010 through 2024.

i) <u>2006 Through 2009 Revenues -- Use of BNSF LRP</u>

Where the pricing document for a plant has expired, BNSF's own internal forecast prepared in the ordinary course of business rather than the EIA's *AEO 2005* forecast should be used to develop revenues for the LRR from 2006 through 2009, the years for which the BNSF

---

[113] WFA/Basin Opening Nar. at III-A-16.

[114] WFA/Basin Opening Nar. at III-A-16.

forecast is available. Since the LRR railroad is hypothesized to carry BNSF coal traffic, BNSF's own forecast of future coal revenues on the BNSF is a better predictor of future revenue growth on the LRR than a national forecast that is not focused on BNSF. It represents BNSF's best estimate of its total annual coal volumes and revenues for the years 2005 through 2009. As explained in section III.A.2, the Board itself has recognized that company forecasts prepared in the ordinary course of business are better predictors of future growth for that company than published forecasts that are not focused on that company.

Table III.A-8 below compares the annual change in revenue predicted by the EIA forecast used by WFA/Basin with that predicted by the BNSF LRP for the years 2006 through 2009.

Table III.A-8
Comparison of Annual Revenue Change
Predicted by EIA *AEO 2005* Forecast
With BNSF LRP Forecast, 2006 through 2009

Year	EIA *AEO 2005* Forecast Annual Rate Change[115]	BNSF LRP Coal Forecast Annual Rate Change[116]
2006	7.2%	{ }
2007	1.3%	{ }
2008	2.2%	{ }
2009	1.8%	{ }
Cumulative Change	**12.9%**	**{ }**

Since the BNSF LRP is better evidence than the EIA's *AEO 2005* forecast of future revenue growth on the LRR, BNSF uses the BNSF LRP to develop revenues for plants whose pricing documents have expired during the years 2006 through 2009.

[115] WFA/Basin Opening electronic workpaper "LRR Traffic and Revenues_WFABasinOpening.xls," worksheet "EIA_AEO2005_Rates."

[116] BNSF Reply electronic workpaper "BNSF LRP.pdf." BNSF used the { } contained in the LRP to determine the annual rate growth for the LRR for 2006 through 2009.

ii) 2010 Through 2024 Projected Revenues

BNSF accepts WFA/Basin's use of EIA's *AEO 2005* forecast to project coal revenues plants with expired pricing documents for the years 2010 through 2024.

(ii) Fuel Surcharge

To calculate fuel surcharge revenue for non-issue movements with contracts or common carrier pricing authorities that contain a fuel surcharge provision, WFA/Basin relied on actual fuel prices through the first quarter 2005, then used the EIA's diesel fuel price forecast to estimate future surcharges.[117] BNSF updated WFA/Basin's analysis to reflect actual fuel prices through the second quarter 2005 data, and modified the price forecast to use the RCAF Fuel index going forward, as discussed in section III.A.3.a.[118]

As also explained in section III.A.3.a, WFA/Basin ignored fuel surcharge revenues associated with the issue traffic, claiming that the fuel surcharge was unreasonable. BNSF disagrees with WFA/Basin's claim and applies the same approach to calculating fuel surcharge revenues for the issue traffic as for non-issue traffic.

(iii) Traffic Summary

Table III.A-9 presents a summary of the differences in the LRR total revenues assumed by WFA/Basin and the total revenues assumed by BNSF. BNSF's total revenues are developed assuming the Board adopts BNSF's avoidable cost approach for calculating the revenues that the LRR receives on cross-over traffic, BNSF's corrections to WFA/Basin's improper rejection of

---

[117] WFA/Basin Opening electronic workpaper "LRR Traffic and Revenues_WFABasinOpening.xls," worksheet "Non_RCAF_Rateadj."

[118] BNSF Reply electronic workpaper "LRR Traffic and Revenues_WFABasinOpening_BNSF Revised.xls," worksheet "Non_RCAF_Rateadj."

the rate adjustment mechanism set out in the CCPA at issue in this case, and BNSF's other corrections to WFA/Basin's revenue projections described above.[119]

Table III.A-9
Comparison of WFA/Basin and BNSF Revenues
For LRR (in millions)

	WFA/Basin Opening	BNSF Reply	Difference
2004 (4Q)	$76.6	$53.7	-$22.9
2005	$327.1	$227.9	-$99.2
2006	$334.1	$231.8	-$102.3
2007	$341.5	$239.3	-$102.2
2008	$349.4	$242.3	-$107.2
2009	$363.1	$248.2	-$114.9
2010	$370.8	$251.7	-$119.1
2011	$379.7	$256.6	-$123.1
2012	$388.5	$260.7	-$127.8
2013	$396.7	$264.0	-$132.7
2014	$404.4	$266.3	-$138.1
2015	$413.5	$272.2	-$141.4
2016	$421.1	$276.5	-$144.6
2017	$429.4	$281.5	-$147.9
2018	$439.1	$286.6	-$152.5
2019	$453.1	$292.3	-$160.8
2020	$463.2	$297.9	-$165.3
2021	$474.0	$303.7	-$170.3
2022	$486.9	$309.9	-$177.0
2023	$502.7	$316.3	-$186.4
2024 (1Q-3Q)	$389.1	$242.1	-$147.0

Source: BNSF Reply electronic workpaper "LRR Traffic and Revenues_WFABasinOpening_BNSF Revised.xls," worksheet "Rev Comp."

The differences shown in the table result from three basic factors: First, BNSF's adjustments to the coal volumes transported by the LRR as described in section III.A.2; second, BNSF's modification of the method for calculating cross-over traffic revenues using the

[119] BNSF's revenues developed using the alternate methodology proposed by BNSF for calculating cross-over revenue divisions -- MSP with 25-mile origination/termination credits -- are set forth in BNSF Reply electronic workpaper "LRR Traffic and Revenues_WFABasinOpening_BNSF Revised MSP.xls."

contestability-based approach, as explained in section III.A.3.c above; and third, BNSF's modification to WFA/Basin's methodology for projecting future coal revenues, as explained in section III.A.3.d above. BNSF Reply Exhibit III.A-8 shows BNSF's revised revenue forecast (using the avoidable cost approach) for all WFA/Basin customers by year from 2004 through 2024.

4. Other -- Elimination of Potential Cross-Subsidy

The Board has expressly stated that non-issue traffic may not be used to cross-subsidize the issue traffic rate because cross-subsidization is "inconsistent with CMP principles."[120] As the Board further explained:

> [A] basic principle of the SAC test is that traffic not be subsidized by other traffic. Indeed, the purpose of the SAC test is to remove such cross-subsidies, while allowing traffic to enjoy the benefits of cost-sharing for those railroad services and facilities that they have in common. Thus, *revenues from non-issue traffic should not be relied upon to pay for portions of a SAC system over which that non-issue traffic would not move.*[121]

WFA/Basin appear to rely on an impermissible cross-subsidy by including very short-haul traffic in the SARR network that only uses the LRR's rail lines north of Donkey Creek. Specifically, WFA/Basin include { } tons of coal in year 2005 (23 percent of coal volumes in that year)[122] that originate at mines north of Campbell and do not touch the SARR facilities south of Donkey Creek. That traffic exits the LRR at Donkey Creek (for eastbound movements) or at Campbell (for westbound movements) after traveling on the LRR for only 13 miles or 11 miles,

[120] *PPL* at 8.

[121] *PPL* at 9 (quoting *Arizona Electric Power Coop. v. BNSF*, STB Docket No. 42058 (served 12/31/01)) (emphasis added).

[122] BNSF Reply electronic workpaper "LRR Traffic and Revenues_WFABasinOpening_BNSF Revised.xls," worksheets "2005 CS" and "Summary."

respectively.[123] In 2005, WFA/Basin assume that this northern traffic will contribute { } million in revenues to the LRR.[124] The inclusion of such substantial revenues associated with traffic that does not use any facilities of the LRR south of Donkey Creek (or 203 miles of the 220-mile LRR[125]) makes it virtually certain that those revenues are being used to subsidize the LRR facilities south of Donkey Creek.

To ensure that such a cross-subsidy does not occur, the Board should not allow any portion of the SARR investment or operations *south* of Donkey Creek to be paid for with revenues from the traffic originating from the northern PRB mines (*i.e.* Buckskin, Rawhide, Eagle Butte, Dry Fork, Fort Union, or Clovis Point) that exits the LRR at Donkey Creek moving east or at Campbell moving west. Effectively, this means that SARR revenues for this traffic can be no higher than the costs incurred to build the *entirety* of the LRR lines north of Donkey Creek plus the operating costs of handling the traffic originating from those northern PRB mines that exits the LRR at Donkey Creek moving east or at Campbell moving west. Mathematically, this is the equivalent of removing the SARR revenues for this traffic, along with all of the construction costs of the SARR lines north of Donkey Creek, and all of the operating costs incurred by this traffic. BNSF has prepared an analysis that removes such revenues and adjusts the SAC costs accordingly.

Under this analysis, BNSF adjusts the stand-alone costs as follows. With respect to construction costs, BNSF still constructs the entire LRR, even the lines north of Donkey Creek

---

123 BNSF Reply Exhibit III.A-7.

124 BNSF Reply electronic workpaper "LRR Traffic and Revenues_WFABasinOpening_BNSF Revised.xls," worksheet "2005 CS."

125 BNSF Reply electronic workpaper "III F LRR Construction.xls," worksheet "Track Data."

so that the SARR traffic from those northern mines that continues on the LRR south of Donkey Creek will continue to be transported by the LRR. However, BNSF does not include any of the construction costs associated with constructing the rail lines and associated facilities north of Donkey Creek in the SAC analysis.[126] This assumption benefits the WFA/Basin issue traffic by implicitly assuming that the economies of scale, scope and density generated by the non-issue traffic originating north of Donkey Creek will entirely offset the cost of constructing the facilities north of Donkey Creek, even though the issue traffic also uses these lines.

With respect to operating costs, BNSF excludes operating expenses associated with the northern PRB traffic removed from the LRR under the analysis, and only includes operating expenses for northern PRB traffic that continues on the LRR south of Campbell. Similar to its supplemental presentation in the *Otter Tail* case filed earlier this year, BNSF urges the Board to adopt an approach that assigns operating expenses to the separate portions of the SARR in a way that more accurately identifies the costs directly assignable to the traffic group that uses the facilities south of Donkey Creek. BNSF followed a two-step process to identify the operating expenses assignable to this through-traffic group. First, BNSF used the detailed work papers underlying the development of the locomotives, crews, maintenance-of-way ("MOW"), equipment inspectors, and other operating expenses and identified the equipment, personnel, and activities that could be linked geographically to the segment south of Donkey Creek or the traffic moving over the segment south of Donkey Creek. Costs for these equipment, personnel, and activities were included as costs directly assignable to the through-traffic group.

In the second step, costs for those equipment, personnel, and activities that could not be linked directly to either the segment south of Donkey Creek or the traffic moving over the

[126] A full description of the construction costs removed under this cross-subsidy analysis appears in Section III.F at Table III.F.12-1.

segment south of Donkey Creek were allocated between the two segments using LRR gross ton-miles. For example, MOW and general & administrative costs not directly assignable to the segment south of Donkey Creek were allocated based on the ratio of gross ton-miles associated with the through movement of all traffic touching any portion of the segment south of Donkey Creek to the total LRR gross ton-miles. Details of these calculations are set forth in BNSF's electronic workpapers.[127] This approach ensures that LRR operations *south* of Donkey Creek are incurring costs only for operating activities from which they derive benefit.

Table III.A-10 shows the revenues (using the avoidable cost approach for determining cross-over traffic revenues) and stand-alone costs that remain after BNSF eliminates the potential cross-subsidy.[128] BNSF presents its SAC results in section H of this Narrative based on this cross-subsidy argument.

---

[127] BNSF Reply electronic workpaper "III D Operating Expenses.xls," worksheet "Summary" and "Copy of Spot Maint Mainline.xls," worksheet "Spot Maintenance Summary."

[128] The revenues and stand-alone costs remaining after elimination of the cross-subsidy when the MSP method with a 25-mile credit is used to calculate cross-over revenues appears in Exhibit III.H-2.

Table III.A-10
Total Revenues and Stand-Alone Costs
After Elimination Of Cross-Subsidy

	BNSF Revenues	BNSF Stand-Alone Costs	Difference (Revenues Minus Stand-Alone Costs)
2004 (4Q)	$49.1	$81.4	($32.3)
2005	$205.5	$285.1	($79.6)
2006	$208.5	$288.9	($80.4)
2007	$216.2	$294.0	($77.7)
2008	$218.9	$300.7	($81.8)
2009	$224.5	$307.6	($83.1)
2010	$227.8	$315.2	($87.4)
2011	$232.2	$323.7	($91.5)
2012	$236.1	$332.3	($96.2)
2013	$239.2	$340.6	($101.3)
2014	$241.4	$348.7	($107.2)
2015	$247.1	$357.3	($110.2)
2016	$251.4	$366.0	($114.6)
2017	$256.1	$375.0	($118.9)
2018	$261.1	$384.4	($123.3)
2019	$266.5	$394.3	($127.8)
2020	$271.8	$403.9	($132.1)
2021	$277.4	$414.0	($136.5)
2022	$283.3	$424.4	($141.1)
2023	$289.5	$435.3	($145.8)
2024 (1Q-3Q)	$221.9	$333.8	($112.0)

Source: BNSF Reply electronic workpaper "BNSF Reply Exhibit_III.H-1.xls"

B. STAND-ALONE RAILROAD SYSTEM

1. Route and Mileage

The LRR network configuration posited by WFA/Basin consists of 217.92 miles and extends from Eagle Butte Jct., WY on the north to Guernsey and Moba Jct., WY on the south. WFA/Basin Opening Nar. at III-B-1. BNSF witness Cassie Gouger reviewed WFA/Basins' route miles for the LRR and identified four additions totaling 1.61 miles. The first addition is a 1.24 mile long mine spur at the North Antelope/Rochelle Mine (Nacco Wye Jct.). There are two south leads to this mine.[1] WFA/Basin included only one of these leads in its configuration of the LRR. WFA/Basin Opening Exhibit III-B-2, p.5 of 12.[2] BNSF and UP constructed this additional lead to accommodate the large number of trains loaded at this mine (an average of 15 per day, 90% of which arrive from and depart to the south) and to avoid congestion on the mainline tracks and mine tracks.[3] Operationally, all empty trains arriving from the south enter the mine on the northernmost lead of the two and all loaded trains departing to the south leave on the southernmost lead track. BNSF's operating expert, Mr. Mueller, determined that both south leads are required for efficient loading operations at the North Antelope/Rochelle Mine, particularly when the UP and residual BNSF trains which originate traffic at this mine are included, as discussed in Section III.B.2.1.(2)(a) below. As this additional track is required in order to achieve an operation as efficient as the mine operation today, the LRR should be required to share the cost of the construction. Additionally, this track is included in the description of the capacity that exists at this mine in the BNSF Guide to Coal Mines upon which

---

[1] BNSF Reply electronic workpaper "n antelope rochelle team schematic.pdf."

[2] WFA/Basin Opening electronic workpaper "LRR Route Miles.xls."

[3] BNSF Reply electronic workpaper "n antelope mine routing percentages.xls."

WFA/Basin relied.[4] The lead that WFA/Basin failed to include is 2.48 miles long. BNSF and UP each owns fifty percent of the second lead. Ms. Gouger added only half of this length (1.24 miles) to the LRR route miles to reflect the fact that BNSF owns one-half of this lead.

The second addition is a 0.16 lead for the Ft. Union Mine. WFA/Basin did not include any mine tracks at the Ft. Union Mine.[5] WFA/Basin, however, did reference the mine schematic which clearly shows that BNSF owns to the right-of-way line (845 feet or 0.16 miles).[6] Therefore, Ms. Gouger added this 0.16 miles to the LRR's route miles.

The third addition is 0.03 miles to the clearance point at Moba. WFA/Basin did not include the length to the clearance point at Moba Junction.[7] BNSF owns 0.03 miles to the clearance point at Moba Junction.[8] Although WFA/Basin do not switch the mine off of the mainline as BNSF does, they nevertheless are responsible for building the trackage that BNSF owns with respect to the mine connection. Therefore, Ms. Gouger added to WFA/Basins' route miles the 0.03 miles to the clearance point at Moba Junction for a number 11 turnout.

The fourth addition is 0.18 additional miles for the west wye at Campbell. WFA/Basin included only 0.27 for the west leg of the Campbell wye.[9] The east leg of the wye is 0.45 miles. The curves of the east and west legs of the wye are similar.[10] WFA/Basin gave no explanation

---

[4] BNSF Reply electronic workpaper "Mine Guide.pdf," p.25.

[5] WFA/Basin Opening electronic workpaper "LRR Route Miles.xls."

[6] BNSF Reply electronic workpaper "fort union team schematic.pdf."

[7] WFA/Basin Opening electronic workpaper "LRR Route Miles.xls."

[8] BNSF Reply electronic workpaper "moba jct track chart.pdf."

[9] WFA/Basin Opening electronic workpaper "LRR Route Miles.xls."

[10] BNSF Reply electronic workpaper "campbell track chart.pdf."

for the difference in the length of the east and west legs of the wye. Ms. Gouger added 0.18 miles to conform the length of the west leg of the wye to the length of the east leg. This methodology is consistent with WFA/Basins' determination of the length of the west wye at Donkey Creek.

These additions are discussed in more detail in Section III.F.3. With these additions, the LRR network consists of 219.53 route miles.[11] Table III.B-1 compares the LRR's route miles as determined by WFA/Basin and BNSF.

---

[11] BNSF Reply electronic workpaper "III F Route Miles.xls."

TABLE III.B-1

COMPARISON OF
LRR LINE SEGMENTS AND ROUTE MILEAGE

Segment	BNSF Subdivision[1]	WFA/Basin Mileage[2]	BNSF Mileage[3]	Difference
Mainlines				
Donkey Creek to Orin Jct.[4]	Orin	128.34	128.34	-----
Orin Jct. to Wendover	Canyon	30.93	30.93	-----
Wendover to Guernsey	Canyon	12.00	12.00	-----
Total Mainline Miles		**171.27**	**171.27**	-----
Branch Lines				
Campbell[5]	Campbell and Black Hills	15.82	16.00	0.18
Reno[6]	Reno	6.46	6.46	-----
Moba[7]	Front Range	20.81	20.81	-----
Total Branch Line Miles		**43.09**	**43.27**	-----
LRR portion of mine spurs		3.56	4.99	1.43
Total Route Miles		**217.92**	**219.53**	**1.61**

[1] The subdivisions shown are operating subdivisions included in BNSF's Powder River Division, as shown in its Operating Timetable and track charts for that Division.

[2] WFA/Basin Opening Nar. at III-B-4, Table III-B-1.

[3] BNSF Reply electronic workpaper "III F Route Miles.xls."

[4] Includes both wye tracks at Donkey Creek and 1.75 miles to connect to BNSF at Orin Jct. for interchange.

[5] Includes both wye tracks at Campbell and the trackage from the west end of the Campbell interchange with BNSF to the east end of Donkey Creek Yard.

[6] Includes both wye tracks at Reno.

[7] Includes both wye tracks at Wendover.

2. Track Miles and Weight of Track

The LRR as proposed by WFA/Basin includes 386.35 miles of track for mainline, passing sidings and branch lines, and an additional 60.16 miles of yard, interchange, helper pocket/setout/MOW, and mine and destination spur tracks, for a total of 446.51 track miles. WFA/Basin Opening Nar. at III-B-6, Table III-B-2. As discussed below, BNSF has accepted WFA/Basin's capacity assessments for the LRR, and therefore BNSF has accepted the basis for calculating track miles used by WFA/Basin. However, BNSF made four relatively small modifications to the LRR's track miles. First, as discussed in Section III.B.1. above, BNSF added 1.43 miles of track for a second south lead to the North Antelope/Rochelle Mine, the lead to the Ft. Union Mine and the lead to the clearance point at Moba Junction.[12] Second, BNSF added 13.59 miles in extensions at setout tracks at failed equipment detectors to accommodate bad-order cars and MOW equipment and for additional setout tracks at dragging equipment detectors, as described in Section III.F.3.d.(2)(d) below. Third, BNSF added 0.68 miles of track outside of the locomotive shop at Guernsey Yard for holding inbound and outbound locomotives prior to entering and after leaving the shop, as described in Sections III.F.7. and III.B.3. below. Finally, BNSF found a 0.02 mile discrepancy when it replicated WFA/Basins' mainline. These additions increase the LRR to 462.23 track miles.

BNSF's revised track configuration for the LRR is shown in BNSF Reply Exhibit III.B-1. This Exhibit also shows the LRR track configuration proposed by WFA/Basin in its Opening Evidence to facilitate a side-by-side comparison of the parties' proposed configurations.

Table III.B-2 below compares WFA/Basins' and BNSF's track miles for the LRR.

[12] The increase of 0.18 miles in the route miles for the west leg of the wye at Campbell does not affect the total track miles, just the amount attributable to route miles.

TABLE III.B-2

COMPARISON OF WFA/BASINS' CALCULATION OF MILES WITH BNSF'S CALCULATION OF MILES OF LRR TRACK

Type of Track	WFA/Basin[1]	BNSF[2]	Difference
Mainline Track	386.35	386.37	0.02
Mine Spurs	3.56	4.99	1.43
Set-Out Track	14.90	28.49	13.59
Yards	41.70	42.38	0.68
Total	**446.51**	**462.23**	**15.72**

[1] WFA/Basin Opening electronic workpaper "Rail Worksheet.xls," worksheet "Rail Type by Subdivision." The miles for each type of track do not sum to the total miles due to rounding.

[2] BNSF Reply electronic workpaper "III F LRR Construction.xls," worksheet "Segment Data."

a. Use of RTC Model

(1) WFA/Basins' RTC Simulation

WFA/Basin used the Rail Traffic Controller Model ("RTC Model") to test the LRR's capacity requirements. A number of preliminary steps were involved in preparing the RTC Model to test the LRR's capacity requirements. First, WFA/Basins' consultants developed a preliminary track configuration for the LRR to be tested by simulation. WFA/Basin Opening Nar. at III-C-24 to 26. Second, based on BNSF's traffic data for the twelve-month period from the fourth quarter of 2003 through the third quarter of 2004, WFA/Basins' consultants determined that the peak traffic week was { }. *Id.* at III-C-26 to 27. Third, based upon WFA/Basins' projected traffic volumes in 2024, the consultants developed train counts and other traffic characteristics (e.g., train length, weight, locomotive and helper needs, dwell times) for the traffic that would move during that peak week in the year 2024, as well as during an initial four-day warm-up period and two-day cool-down period (resulting in a 13-day modeling period from { }. *Id.* at III-C-27 to 28. Fourth, WFA/Basins' consultants identified a starting point for each train's movement on the LRR -- the arrival of the empty train at the interchange point to the LRR (in the case of cross-over traffic) or, in the case of the Laramie River traffic, the release of the empty train at the Laramie River Station ("LRS"). Id. at III-C-28 to 29. Finally, the consultants coded all of these inputs into the RTC Model and ran a simulation to develop a configuration, transit times and other operating statistics presented in WFA/Basins' Opening Evidence.

BNSF agrees that the RTC Model is an appropriate and effective simulation model to develop capacity requirements and transit times for the LRR, assuming that the inputs to the model reflect real-world operating conditions. In this case, however, WFA/Basins' consultants made certain assumptions about LRR operations that do not reflect real-world operations and ignored other operational realities altogether. The effect of the assumptions and omissions is an idealized simulation that cannot reliably predict the LRR's capacity requirements or transit times under real-world conditions.

The principal problems with WFA/Basins' RTC Model simulation can be summarized as follows:

- WFA/Basins' simulation assumes that all the loading slots at PRB mines jointly served by BNSF/Union Pacific ("UP") and the LRR are always available for the LRR despite the fact that the LRR would be required to coordinate and share access to certain mine slots with UP and, to a lesser extent, the residual BNSF;
- WFA/Basin overstated the effective operational train capacity of eleven of the PRB mines to accommodate unit coal trains;

- WFA/Basin understated the number of random failures during the simulation period;
- WFA/Basin understated certain time requirements for LRR trains, including interchange and fueling times for certain loaded trains at Guernsey Yard, and unloading time at the LRS;
- WFA/Basin used the incorrect grades at various locations on the LRR system;
- WFA/Basin incorrectly coded signals at a number of locations on the LRR in its RTC Model simulation;
- WFA/Basin incorrectly retained helper locomotives on seven trains beyond the end of the helper district.

Each of these problems is discussed in more detail in the sections below. Also, as described below, BNSF corrected these flaws and reran the RTC Model simulation. BNSF concluded that, notwithstanding the shortcomings in WFA/Basins' RTC analysis, the basic track and yard capacity of the LRR as designed by WFA/Basin is adequate for the LRR traffic group. Nevertheless, BNSF sets forth in this section a detailed description of the changes that need to be made in the RTC analysis since those changes have an impact on the transit times for LRR trains, and, therefore, affect operation costs that are discussed in later sections of the Narrative.

(2) Problems With WFA/Basins' RTC Simulation

(a) WFA/Basin Failed to Account for Delays Caused by the Loading of UP Trains and Residual BNSF Trains at Jointly-Served Mines

WFA/Basin assumed that empty LRR trains could move onto the mine tracks to be loaded without accounting for the need to share limited capacity at the mines with UP trains or residual BNSF trains. WFA/Basin argue that they do not need to separately account for the presence of UP trains at the Orin subdivision mines in their RTC simulation because the 5.5 hours they allow for loading at those mines already accounts for the possible presence of UP trains. According to WFA/Basin, "[a]lmost all of the mines [on the Orin Subdivision] involved can load a train in two hours or less." WFA/Basin Opening Nar. at III-C-38. Thus, WFA/Basin asserted that providing 5.5 hours for loading must be sufficient to deal with any delays caused by the presence of UP trains. There are several flaws in this argument.

First, and most important, the argument that mine loading time accounts for the presence of UP trains confuses two distinct issues: (1) how much time does a train spend at the mine after it is admitted to the mine's limited track capacity; and (2) is there any space available at the mine for a train to enter. The parties agree on the first issue: once a train is admitted to an Orin Subdivision mine, it takes on average 5.5 hours to go through the entire loading process. As discussed below, this loading time covers numerous activities and some of the time may even be attributable to the presence of other trains at the mine. The problem with WFA/Basins' argument that mine loading time accounts for the presence of UP trains is that it utterly ignores the question whether the mine has sufficient capacity to admit a new train. A train cannot enter the mine until there is physical capacity available to accommodate it. If the available capacity is already occupied by other trains, the new train must wait somewhere outside the mine -- at a yard, a siding, or on the mainline track -- for the physical capacity to become available.

WFA/Basins' RTC Model fails to adequately consider whether capacity at the mine is available to admit a new train. Messrs. Reistrup and Smith assert that all of the mines that are jointly served by BNSF and UP "have capacity for at least three trains at a time on their private trackage, and six of the nine jointly served mines have two loop tracks." WFA/Basin Opening Nar. at III-C-39. As discussed below, WFA/Basin have overstated the operational capacity of all the jointly-served mines for unit coal trains. In any case, even assuming the mines have the capacity posited by WFA/Basin does not mean that mine capacity can be totally ignored. If, for example, a mine can accommodate three trains at a time, but the three trains happen to be UP trains, there simply is not enough physical capacity to allow an LRR train to enter. The LRR train must wait until one of the UP trains has departed before the LRR train can enter the mine. If the LRR train is required to wait, there must be sufficient capacity somewhere outside the mine to hold the waiting train. Thus, by ignoring the fact that UP trains will occasionally occupy limited capacity available at the mine, WFA/Basins' RTC Model failed to accurately assess the capacity needs and additional staging time of the LRR.

Second, Messrs. Reistrup's and Smith's assertion that the 5.5 hours of loading time at Orin Subdivision mines accounts for the presence of UP trains is incorrect. BNSF accepts Messrs. Reistrup's and Smith's use of 5.5 hours because that approximates the real-world time spent by BNSF trains loading at Orin Subdivision mines from arrival at the mine (which assumes capacity is available) to spot to release.[13] Arrival-to-spot is measured as the time from the arrival of the train at the entrance to the mine (again, assuming capacity is available) until the first car is spotted under the tipple for the actual loading of the cars. This time will include, among other things, inspection of the cars, closing of doors as required, and movement over a weigh-in-

[13] BNSF Reply electronic workpaper "minetime1.xls," worksheet "mines."

motion scale at approximately 2 MPH enroute from the receiving track to the tipple.[14] Spot-to-release is the actual time the train moves under the tipple while coal is being loaded into each car, from the time the first car is loaded until the last car is loaded and has moved over the weigh-in-motion scale, when the train is deemed to have been released and is waiting for departure.[15] During the spot to release period, activities other than simply loading the coal onto the train may occur. For example, time may be required to deal with coal spills that could cause the train to derail if it continued to move forward, the weigh-in-motion scale may malfunction, it may be necessary to wait for mine loading crews to become available, or quality or specification problems with the coal in the tipple may be detected and require resolution.

WFA/Basin attempt to demonstrate that the 5.5 hours of mine dwell time allotted by Messrs. Reistrup and Smith exceeds the real world mine dwell time. WFA/Basin state that information produced by BNSF in discovery indicates that the average time that BNSF trains spent at the jointly-served mines between the spotting of the empty train at the tipple and the release of the loaded train during the third quarter of 2004 was 5.04 hours. WFA/Basin Opening Nar. at III-C-40. As an initial matter, WFA/Basin calculated its dwell time as a straight average

[14] At the mines that use a third-party contractor for loading, the arrival-to-spot time is measured from the arrival of the train until the BNSF or UP crew stops on the mine-owned track. The functions identified in the text for the arrival-to-spot time then move to the spot-to-release segment.

[15] Consistent with the Board's discussion in *TMPA*, BNSF did *not* include in the 5.5 hours of loading time the amount of time spent from the release of the loaded train to the return of the train to the mainline. That real-world time (which is not included in BNSF's RTC Model simulation) might have included some time attributable to the real-world sharing of Orin Subdivision capacity by BNSF and UP. As the Board noted in TMPA, "a [SARR] train would be unlikely to incur delays waiting to reenter the main line after it is loaded." *TMPA* at 75. However, while the LRR does not share its mainline with the UP, it does share the *mine capacity* at Orin Subdivision with the UP and that sharing of mine capacity cannot be ignored in the LRR's operating plan and capacity model.

of the dwell times at the nine jointly-served mines.[16] It is more accurate to determine dwell times on the basis of the weighted average of all trains using each mine and including the arrival to spot times even though they are minimal. Calculated on the basis of weighted average, the dwell time at the nine mines during the third quarter of 2003 equals 5.45 hours, approximately the 5.5 hour dwell time used in the RTC Model simulation.[17] In any case, the dwell time of 5.04 hours posited by WFA/Basin equates to a reduction of approximately 28 minutes per train from the 5.5 hour mine dwell time, hardly sufficient time to accommodate several hundred UP trains during the simulation period. In summary, the 5.5 hours represents the actual loading time required from arrival to release, on average, at the Orin Subdivision mines and there is no extra time in that loading time assumption.

Third, the actual, real-world loading time of 5.5 hours could only be accomplished by the LRR if it carried out the same staging activities that the real-world railroads carry out to make such a loading time possible. If the real-world railroads did not coordinate their access to the mines and try to avoid sending trains to the mines when available mine loading capacity is taken up by other trains, congestion near the entrance of each mine would increase substantially. Indeed, without staging, the entire loading process could come to a grinding halt. Staging means that access to the mines is managed in such a way as to avoid whenever possible sending a train to a mine that has no space for another empty train.

BNSF, UP (formally CNW) and the mines have been working jointly for over 20 years to manage the loading of coal at the jointly-served mines on the Orin Line as efficiently as possible.

---

[16] WFA/Basin Opening electronic workpaper "LRR Load-Unload_UPServecMines-3Q04."

[17] BNSF Reply electronic workpaper "minetime1.xls," worksheet "summary," cell D17.

They have developed a protocol that allows all parties to maximize their loading opportunities in light of limited capacity in the mine loading area. Using a confidential system called the Coal Forecasting Tool, loading slots are allocated to BNSF and UP based on expected tonnage requirements at each mine. This allocation is the basis for the scheduling of empty trains to each mine by the Coal Superintendents (three to four positions working around the clock) that staff the joint BNSF/UP Coal Operations group in the BNSF Network Operations Center. Every four hours, the Coal Operations group issues a tentative lineup of BNSF and UP trains to be loaded at each mine, with a 72-hour projection of the trains that are expected to be loaded and an approximate arrival time.

The projection of train loading time is continuously refined and altered as trains approach the PRB. The most precise scheduling of a loading slot occurs when the UP trains arrive at North Platte, Nebraska, and the BNSF trains arrive at either Alliance, Nebraska, or Guernsey, Wyoming. At this point, if congestion at any given mine is discovered, the Coal Superintendents can delay the train at different locations until a slot designated for them is available. Alternatively, they can attempt to get authority from the utility to divert the train to another mine that has a contract that allows the utility to load and that has an available slot. But even with the efforts of the Coal Operations group, there are occasions when the best scenario is simply to hold the train at some location (e.g., Bill, Wyoming or Donkey Creek, or on an available siding) until a slot is available.

Thus, the 5.5 hours of loading time in the real world is only accomplished because the real-world railroads using the jointly served mines recognize that mine slots are not available at all times. By staging trains for access to the mines only when loading slots are available, the real-world railroads avoid creating an inefficient free-for-all in the PRB that would produce immediate gridlock.

The Board in *Xcel II* made it clear that a SARR serving PRB mines must account for the staging of empty trains in the PRB. There, the Board stated:

> [T]he assumptions used in the SAC analysis, including the operating plan, must be realistic, i.e., consistent with the underlying realities of real-world railroading. A real-world railroad could not place empty trains at mines at its convenience, without regard to whether the trains could be accommodated at the mine at that time. Staging facilities would be required, whether at the mine or elsewhere. It does not matter where the operating plan would stage the trains, so long as the trains would flow into and out of the PRB region in a reasonable fashion.[18]

WFA/Basin acknowledge the need to make provision for staging, stating that there are two sidings on the Reno Branch that can be used to hold empty trains, and Messrs. Reistrup and Smith have provided extra staging capacity at Donkey Creek, Reno, South Logan, Wendover and Guernsey. WFA/Basin Opening Nar. at III-C-39. WFA/Basin further assert that no trains in its RTC simulation use the tracks at the South Logan Yard, the siding on the Orin Subdivision at Reno or one of the empty-train tracks at Donkey Creek Yard. *Id.* at III-C-40. WFA/Basin argue that these unused tracks "are available in the unlikely event that the presence of a UP train at any of the jointly served mines...would otherwise delay the entry of a LRR train onto the private trackage at the mine." *Id.* Although WFA/Basin pay lip service to the need for staging, by failing to include UP trains at the mines WFA/Basins' RTC simulation is fundamentally flawed because it cannot assess the adequacy of the staging that WFA/Basin has provided. As a result, the RTC simulation conducted by WFA/Basin does precisely what the Board cautioned against --

---

[18] *Xcel II* at 12.

it assumes that the SARR can "place empty trains at mines at its convenience, without regard to whether the trains could be accommodated at the mine at that time."[19] WFA/Basins' RTC Model simulation is therefore flawed and fails to account for the capacity that is needed to handle the traffic needs of the LRR's shipper group.

BNSF therefore modified WFA/Basins' RTC Model simulation to account for the presence of UP trains, and the presence of residual BNSF trains, at the mines in the same manner that the real-world BNSF does. First, BNSF's modified RTC Model simulation replicated the actual mine capacity by including in the model the correct operational train capacity for each mine that exists in the real world. This issue is addressed in the next section of this Narrative. Second, BNSF determined the actual time that UP trains and residual BNSF trains in the real world arrived at the loading tracks at each mine during the 13-day period that was the basis of both parties' simulation.[20] Mr. Wheeler instructed the RTC Model to assume that a UP train or a residual BNSF train occupied a loading track at the same mine in the simulation of LRR operations.

This simple set of modeling assumptions allowed BNSF's RTC simulation to assess the capacity needs of the LRR in light of the limited capacity that exists at the mines. Thus, in BNSF's RTC Model simulation, if a mine had the operational capacity to accommodate two trains and only one train (a UP train, residual BNSF train or other LRR train) was at the mine, an LRR train seeking to enter the mine would have no impediment to entry. The RTC Model would allow the LRR train to enter, as in the real world, and the loading process would then take the

---

[19] *Id.*

[20] BNSF Reply electronic workpapers "BNSF residual train data.xls" and "UP Empty Train Data.xls."

same 5.5 average hours that it takes in the real world to load trains. If that same mine had two UP trains and/or residual BNSF trains occupying the loading tracks (or if the two available tracks were occupied by one UP train and another LRR train), the RTC Model would not allow the newly arriving LRR train to enter the mine until one of the other trains left. The LRR, like the real-world BNSF, would require enough capacity outside the mine to hold empty trains until the limited mine capacity becomes available.

(b) WFA/Basin Overstated the Operational Train Capacity of 11 PRB Mines

WFA/Basin also overstated the operational train capacity of 11 of the PRB mines to be served by the LRR. The overstatement occurred because WFA/Basin inappropriately equated the maximum number of unit coal trains that the track configuration at each of the mines can physically hold with the operational train capacity of each of these mines. Total "physical" capacity is not the same as total "operational" capacity. In many cases, if all available space on mine tracks were filled with trains, nothing would move and operations would be impossible. BNSF's expert, Mr. Mueller, by contrast, prepared an assessment of the operational train capacity of each of the mines served by the LRR, based on a review of the schematics of each mine. Table III.B-3 below compares the maximum "physical" capacity of the mines served by the LRR to hold unit coal trains as asserted by WFA/Basin and the "operational" capacity as determined by Mr. Mueller.

TABLE III.B-3

COMPARISON OF UNIT COAL TRAIN CAPACITY OF PRB MINES

Mine	WFA/Basin[1]	BNSF
Buckskin	4[2]	3[2]
Rawhide	2	2
Eagle Butte	3	3
Clovis Point	1	1
Ft. Union	1	1
Dry Fork	3	1
Caballo	5	3
Caballo Rojo	4	3
Belle Ayr	3	2
Cordero	4	3
Jacobs Ranch	4	3
Black Thunder (N)	8[3]	4[3]
So Blk Thunder	4	3
N Ant/Rochelle	12	8
Antelope	4	3
TOTAL	62	43

[1] BNSF Reply electronic workpaper "RTC Snapshots - LRR Opening.PPT." This workpaper is a snapshot of the LRR network and mines that WFA/Basin used in its RTC Model simulation. The number of lines shown at each mine represents the unit train capacity of the mine assumed by WFA/Basin for its modeling.

[2] As discussed below, this train capacity includes consideration of additional trackage to be built by Buckskin mine this year that is not reflected in the BNSF Guide to Coal Mines.

[3] As discussed below, the BNSF Guide to Coal Mines erroneously states there are three loop tracks at North Black Thunder mine; there are only two loop tracks.

WFA/Basin based the number of unit coal trains that can be held at each mine on the description of the total track configuration for the mine in the BNSF Guide to Coal Mines.[21] WFA/Basin Opening Nar. at III-C-39, n.18.[22] The train holding capacity listed in the track configuration section of the BNSF Guide to Coal Mines represents the "physical" capacity of the mine-owned trackage to hold unit coal trains without regard to the operational requirements for maintaining efficient loading operations (such as bringing the empty unit coal trains onto the mine trackage prior to loading, providing clear tracks for trains to move through the loading process, and leaving routes clear for loaded trains to depart). What is important in evaluating the LRR, however, is the "operational" capacity of each mine to accommodate unit coal trains while maintaining efficient loading operations. "Operational" train capacity is usually lower than "physical" train capacity because holding trains on all available trackage at a mine usually will impede the flow of trains through loading operations. The 5.5 and six hour dwell times at the mines assumed by the parties in this case are based on a continuing flow of trains through the loading process without interruptions due to the need to reposition trains parked on mine tracks that impede loading operations. Based upon discussions with Tony Deichert, BNSF General Superintendent, Coal Operations (whose responsibilities include scheduling and monitoring the loading of trains at the PRB mines jointly with the UP), review of the schematic diagrams for the tracks at the PRB mines, and his own experience, Mr. Mueller evaluated the operational capacity

---

[21] The version of the BNSF Guide to Coal Mines that WFA/Basin included in their hardcopy workpapers is not the BNSF Guide to Coal Mines provided by BNSF in discovery. For purposes of this Narrative, BNSF generally refers to the version of the Guide to Coal Mines included in WFA/Basins' hardcopy workpapers, unless otherwise specifically noted.

[22] See also, WFA/Basin Opening Workpapers Vol. 7, pp. 4314-4359.

of each mine to accommodate unit coal trains while maintaining the efficient flow of trains for loading operations.

A mine-by-mine description of operational train capacity is set out below. This discussion is supported by Mr. Mueller's markup of the mine schematics depicting the operational train capacity of each mine. See BNSF Reply Exhibit III.B-2.

i) North Antelope/Rochelle Mine

WFA/Basin state that the North Antelope/Rochelle Mine can hold 12 trains on site. WFA/Basin Opening Nar. at III-C-32, n.18. The description of the track configuration at the North Antelope/Rochelle Mine in the BNSF Guide to Coal Mines states that there are "[t]wo loops and four storage tracks plus three legs on the WYE - can hold up to 12 trains on site."[23] However, Mr. Mueller explains, the effective operational train capacity of the North Antelope/Rochelle Mine is only eight unit coal trains. Mr. Mueller marked up a schematic of the mine trackage to demonstrate this effective operational train capacity as follows: [24]

- Each of the two loop tracks can accommodate one empty train proceeding through the loadout followed by a second empty train moving up to the loadout after the first train has completed loading, for a total of four trains.
- Three of the four storage tracks located prior to the loadout can hold one empty train, thereby accommodating three additional trains. When a loaded train emerges from one of the loop tracks in the loadout and passes through the crossovers to depart, one of the empty trains on the storage

---

[23] BNSF Reply electronic workpaper "Mine Guide.pdf," p.18.

[24] BNSF Reply Exhibit III.B-2, p. 15 of 16.

tracks can begin moving up into the loadout to follow the next train loading on that loop.

- The fourth "storage" track needs to be kept clear for loaded trains to depart from the mine loop track and can accommodate one departing train.
- The crossovers located between the storage tracks and the loop tracks need to be kept clear for movement of trains between the empty storage tracks and the mine loop loading tracks.
- The BNSF Guide to Coal Mines included the three legs on the WYE in its determination of the capacity to hold unit coal trains. The three legs of the WYE, however, need to be kept clear to facilitate the ingress and egress of trains to and from the mine off the mainline from both the north and the south.
- The departure track has the capacity to hold a second departing train, but this would block the departure of trains emerging from the loading process and stop any further loading of empty trains.

ii) Black Thunder Mine

WFA/Basin assert that the Black Thunder Mine has the capacity to hold eight unit coal trains.[25] There is an error in the description of the track configuration for the Black Thunder Mine in the BNSF Guide to Coal Mines included in WFA/Basins' hardcopy workpapers which

[25] WFA/Basin Opening Nar. at III-C-39, n.18; BNSF Reply electronic workpaper "RTC Snapshots -LRR Opening.PPT."

states that this mine has three loop tracks.[26] As stated in the BNSF Guide to Coal Mines provided by BNSF in discovery, the Black Thunder mine has only two loop tracks holding four unit trains on site.[27] Similarly, the TEAM Manual schematic for the Black Thunder Mine submitted by BNSF in discovery shows there are only two loop tracks at this mine.[28] Additionally, Mr. Mueller was advised by Mr. Deichert that the outer loop at the Black Thunder Mine is only used approximately five percent of the time because it is a slower loading facility. To be conservative, however, Mr. Mueller assumed that the outside loop can be used 100% of the time for loading on an equal basis with the inside loop. Based upon this assumption, and the configuration of the trackage at the Black Thunder Mine, Mr. Mueller determined that each loop track has the capacity for one empty unit coal train following one unit coal train going through the loading process, for a total operational capacity of four unit coal trains as noted on his markup of the schematic for this mine.[29] Mr. Mueller notes that a loaded train must depart in order for the empty train behind it on the same loop track to begin the loading process.

iii) <u>Buckskin Mine</u>

The BNSF Guide to Coal Mines states that the Buckskin Mine has a track configuration of a "[l]oop track with siding holding two unit trains on site."[30] WFA/Basin, however, assert that the existing configuration can accommodate three trains at a time. WFA/Basin Opening Nar. III-C-39, n.18. This is incorrect. As noted on Mr. Mueller's markup of the schematic for the

---

[26] BNSF Reply electronic workpaper "Mine Guide.pdf," p.10.

[27] BNSF Reply electronic workpaper "Black Thunder.pdf."

[28] BNSF Reply electronic workpaper "Black Thunder Team Schematic.pdf."

[29] BNSF Reply Exhibit III.B-2, p.13 of 16.

[30] BNSF Reply electronic workpaper "Mine Guide.pdf," p.11.

Buckskin Mine, the current configuration accommodates one unit train loading on the loop track (7,904 feet long) and one unit coal train waiting on the existing auxiliary track (7,763 feet long).[31] In order for a loaded train to exit the loop and return to the mainline, another train cannot occupy the lead track. Therefore, the BNSF Guide to Coal Mines correctly states that the Buckskin Mine has the capacity to hold two unit coal trains based upon its existing configuration.

As WFA/Basin note, Buckskin Mine plans to add another track at the mine in the summer of 2005. WFA/Basin Opening Nar. at III-C-39, n.18. Mr Mueller agreed with WFA/Basin that this additional track would enable the mine to accommodate one additional unit coal train, increasing the operational capacity of the Buckskin Mine from two to three unit coal trains. It is BNSF's understanding that this additional track has not yet been constructed and placed into operation. However, to be conservative, Mr. Mueller's analysis assumes that the Buckskin Mine has the additional capacity that would be provided by this additional track. Therefore, Mr. Mueller determined that this mine has an operational capacity of three unit coal trains.

iv) Rawhide, Eagle Butte, Clovis Point and Fort Union Mines

WFA/Basin assume that the Rawhide Mine has the maximum capacity to hold two unit coal trains, the Eagle Butte Mine has the maximum capacity to hold three unit coal trains and the Clovis Point and Fort Union mines each has the maximum capacity to hold one unit coal train.[32]

---

[31] BNSF Reply Exhibit III.B-2, p.1 of 16.

[32] BNSF Reply electronic workpaper "RTC Snapshots - LRR Opening.PPT."

Mr. Mueller agrees that these maximum holding capacities also represent the operational capacities of each of these mines to load unit coal trains.[33]

v) Dry Fork Mine

The BNSF Guide to Coal Mines describes the track configuration for the Dry Fork Mine as "[l]oop track holds one unit train on site."[34] WFA/Basin, without explanation, assume that this mine can hold three unit coal trains on site.[35] Mr. Mueller's markup of the schematic for the Dry Fork Mine shows that the single loop track at this mine is 8,506 feet long, which gives it a capacity of one unit coal train going through the loading process.[36] The track located between the switch at the end of loop and the entrance to the mainline is only 5,171 feet long, which does not provide sufficient capacity for a unit coal train. Therefore, Mr. Mueller determined that this mine has an operational capacity of one unit coal train.

vi) Caballo Mine

WFA/Basin assume that the Caballo Mine has a capacity of five unit coal trains.[37] The BNSF Guide to Coal Mines describes the track configuration for the Caballo Mine as "[t]wo loop tracks in-bound and two loop tracks out-bound holding five unit trains on site."[38] Mr.

---

[33] BNSF Reply Exhibit III.B-2, pp. 2, 3, 4 and 5 of 16.

[34] BNSF Reply electronic workpaper "Mine Guide.pdf," p.15.

[35] BNSF Reply electronic workpaper "RTC Snapshots - LRR Opening.PPT."

[36] BNSF Reply Exhibit III.B-2, p. 6 of 16.

[37] WFA/Basin Opening Nar. at III-C-39, n.18; BNSF Reply electronic workpaper "RTC Snapshots - LRR Opening.PPT."

[38] BNSF Reply electronic workpaper "Mine Guide.pdf," p.12.

Mueller determined that this mine has an operational train capacity of three unit coal trains, as shown on his markup of the schematic for this mine.[39]

Mr. Mueller's markup shows there is a length of approximately 7,600 feet on each of the loop tracks prior to the loadout (between points C and D and C and N on the mine schematic).[40] Mr. Mueller determined that each of these loop tracks can hold one empty train prior to the loadout. On the loaded side, the distance between the loadout and the lead to the inbound loop tracks (Points R to C on the mine schematic) is only 6,251 feet.[41] Thus, there is not sufficient room to complete the loading of a train without blocking this lead. Loads departing to the south also block all access to the mine tracks from the mainline. Additionally, a loaded train on a loop track must depart before the empty train behind it on the same loop can complete the loading process. Based upon these operational considerations, Mr. Mueller concluded that the Caballo mine has an operational capacity of three unit coal trains -- two empties prior to the loadout, and one loaded train -- while permitting operations to continue. If five unit coal trains were allowed to occupy this site, as posited by WFA/Basin, loading operations would come to a complete halt and would not be resumed until two of the trains had departed.

vii) Caballo Rojo Mine

WFA/Basin assume that the Caballo Rojo Mine has the capacity to hold four unit coal trains.[42] The BNSF Guide to Coal Mines describes the track configuration for Caballo Rojo

---

[39] BNSF Reply Exhibit III.B-2, p.7 of 16.

[40] *Id.*

[41] *Id.*

[42] WFA/Basin Opening Nar. at III-C-39, n.18; BNSF Reply electronic workpaper "RTC Snapshots - LRR Opening.PPT."

Mine as "[t]wo loop tracks holding four unit trains on site."[43] Mr. Mueller determined that this mine has an operational train capacity of three unit coal trains, as shown on his markup of the schematic for the mine.[44]

As Mr. Mueller's markup shows, the lengths of the two loop tracks prior to the loadout are 7,454 feet (points G to L on the mine schematic) and 7,840 feet (points G to H), respectively, and the lengths of the two loop tracks after the loadout are 7,639 feet (points K to J) and 8,638 feet (points F to N), respectively.[45] Thus, a loaded train must depart the loop track to provide room for the empty train behind it to move up through the loading process. If there are two loaded trains holding on the two loop tracks after the loadout, loading operations will come to a halt.

In light of these operational considerations, Mr. Mueller determined that the operational capacity of Caballo Rojo Mine is one empty train on each of the loop tracks (a total of two trains), which could proceed through the loading process. A third empty train could be on the single track between points A and F, giving the mine a total operational train capacity of three unit coal trains. When one of the empty trains being loaded has completed the loading process, the holding empty train could move from the single track onto the track prior to the loadout on the same loop as the loaded train. The loaded train could then depart when this empty train has moved completely onto the loop (thereby clearing the departure track between points F and A). If the mine held four trains, two empty trains on the loop track prior to loadout and two loaded

---

[43] BNSF Reply electronic workpaper "Mine Guide.pdf," p.20.

[44] BNSF Reply Exhibit III.B-2, p.8 of 16.

[45] *Id.*

trains on the loop track after the loadout, loading operations would cease until one of the loaded trains had departed.

viii) Belle Ayre Mine

WFA/Basin assume that the Belle Ayre Mine has the capacity to hold three unit coal trains.[46] The BNSF Guide to Coal Mines describes the track configuration for this mine as "[l]oop track holds three unit trains on site."[47] Mr. Mueller determined that this mine has an operational train capacity of two unit coal trains, as shown on his markup of the schematic for the Belle Ayre Mine.[48] An additional operational requirement at this mine is the need to add helper locomotives to all northbound loaded trains prior to their departure from the mine.

This mine has a single loop track with two auxiliary tracks along the lead -- one 7,672 feet long (track 4002 on the mine schematic) which can only be used for empty trains arriving from the south and the other 7,849 feet long (track 4001) which can be used for empty trains arriving from the north or south.[49] All northbound loaded trains must depart on track 4003 to the mainline and southbound loaded trains must crossover at the L to K crossover to track 4001, requiring that the track to be clear from the crossover to the main track before the load can depart. Therefore, any empty train on track 4001 must be able to pull forward onto the loop track to clear the crossover before a southbound load can depart. Additionally, northbound loads must have the helper locomotives added to the rear of the train prior to departing the mine and

---

[46] BNSF Reply electronic workpaper "RTC Snapshots - LRR Opening.PPT."

[47] BNSF Reply electronic workpaper "Mine Guide.pdf," p.9.

[48] BNSF Reply Exhibit III.B-2, p.9 of 16.

[49] *Id.*

that requires a route must be kept clear for the helper to get to the rear of the train before the load can depart.

ix) Cordero Mine

WFA/Basin assume the Cordero Mine has a capacity to hold four unit coal trains.[50] The BNSF Guide to Coal Mines describes the track configuration for this mine as "[t]wo loop tracks holding four unit trains on site."[51] Mr. Mueller determined that the operational train capacity of this mine is three unit coal trains, as shown on his markup of the schematic for this mine.[52]

Mr. Mueller noted that the south lead to this mine can accommodate two unit coal trains -- one moving through the loading process and one being held on a siding off of the lead prior to loading. If two trains are loading on the loop tracks, one must depart before the second empty being held off of the south lead can move up for loading. The north lead, which is only 7512 feet in length (points A to C on the mine schematic), can accommodate only one unit coal train through the loading process because the rear car has to clear point S empty in order for the train to depart loaded on the same lead to the north. Thus, in order to achieve an operating train capacity of three unit coal trains, one of the unit coal trains has to be entering the mine from the north, and two from the south. To be conservative, Mr. Mueller assumed that the trains will move into the mine in this manner from these directions in his evaluation of the operational train capacity of the mine. Otherwise, the operational train capacity of this mine would be only two

---

[50] WFA/Basin Opening Nar. at III-C-39, n.18; BNSF Reply electronic workpaper "RTC Snapshots - LRR Opening.PPT."

[51] BNSF Reply electronic workpaper "Mine Guide.pdf," p.14.

[52] BNSF Reply Exhibit III.B-2, pp.10 and 11 of 16.

unit coal trains if both trains were entering from the south or one if all trains were entering from the north.

x) Jacobs Ranch Mine

WFA/Basin assume that Jacobs Ranch Mine has a capacity to hold four unit coal trains.[53] The BNSF Guide to Coal Mines included by WFA/Basin in its hardcopy workpapers describes the track configuration for this mine as "[t]wo loop tracks holding four unit trains on site."[54] The BNSF Guide to Coal Mines provided by BNSF in discovery states that this mine has "[t]wo loop tracks holding three unit trains on site.[55] Mr. Mueller determined that this mine has an effective operating train capacity of three unit coal trains, as shown on his markup of the schematic for this mine.[56]

Mr. Mueller determined that two empty coal trains can be loading on the two loop tracks, although the first train loading has to be approximately half loaded before the next empty can move to the second loop track. The first train loaded has to depart for the second train to complete loading. A third empty train can be held on the lead (track 6506 on the mine schematic between points C and D) waiting for a train in front of it to complete loading, thereby giving this mine an effective operational train capacity of three unit coal trains.

xi) South Black Thunder Mine

---

[53] WFA/Basin Opening Nar. at III-C-39, n.18; BNSF Reply electronic workpaper "RTC Snapshots - LRR Opening.PPT."

[54] BNSF Reply electronic workpaper "Mine Guide.pdf," p.17.

[55] BNSF Reply electronic workpaper "Jacobs Ranch.pdf."

[56] BNSF Reply Exhibit III.B-2, p.12 of 16.

WFA/Basin assume the South Black Thunder Mine has a capacity of four unit coal trains.[57] The BNSF Guide to Coal Mines describes the track configuration for the South Black Thunder Mine as "[l]oop track holding up to four unit trains on site."[58] Mr. Mueller determined that this mine has an operational train capacity of three unit coal trains, as shown on his markup of the schematic for this mine.[59]

Mr. Mueller determined that the loop track at South Black Thunder Mine could accommodate two unit coal trains. On his markup of the schematic for this mine, he included a new auxiliary track that is now in operation and can hold one additional empty train, giving this mine an effective operating train capacity of three unit coal trains.[60]

xii) <u>Antelope Mine</u>

WFA/Basin assume the Antelope Mine has a capacity of four unit coal trains.[61] The BNSF Guide to Coal Mines describes the track configuration for the Antelope Mine as "[l]oop track holds four unit trains on site."[62] Mr. Mueller determined that this mine has an operational

---

[57] WFA/Basin Opening Nar. at III-C-39, n.18; BNSF Reply electronic workpaper "RTC Snapshots - LRR Opening.PPT."

[58] BNSF Reply electronic workpaper "Mine Guide.pdf," p.21.

[59] BNSF Reply Exhibit III.B-2, p.14 of 16.

[60] *Id.* An additional train could fit on the lead track to the second auxiliary track switch but it would block the exit of any loaded trains off the loop track. It would, therefore, have to back out on the mainline track to allow the load to depart and then reenter the mine after the empty on the auxiliary track pulls up.

[61] BNSF Reply electronic workpaper "RTC Snapshots - LRR Opening.PPT."

[62] BNSF Reply electronic workpaper "Mine Guide.pdf," p.8.

train capacity of three unit coal trains, as shown on his markup of the schematic for the Antelope Mine.[63]

Mr. Mueller's markup of the schematic for the Antelope Mine includes two new auxiliary tracks adjacent to the lead that have been constructed at this mine. Mr. Mueller determined that three of these four tracks can be used for arriving empty trains, with one of these trains moving through the loading process, giving this mine an effective operational train capacity of three unit coal trains. The fourth track needs to be kept open for departure of loaded trains. If a loaded train is held on this departure track, no other trains will be able to move through the loading process until it departs.

Mr. Wheeler used the operational train capacity of each PRB mine as determined by Mr. Mueller in BNSF's RTC Model simulation of the LRR.

(c) WFA/Basin Understated the Number of Random Failures During the 13-Day Study Period

WFA/Basin recognize that "[r]andom events that affect track, signals and equipment are part of everyday railroading" and "[i]t is unrealistic to expect that no such events would occur during the LRR's peak simulation period or that such events would not affect train operations." WFA/Basin Opening Nar. at III-C-49. WFA/Basins' experts, Messrs. Reistrup and Smith, reviewed information provided by BNSF in discovery concerning outages that occurred on the BNSF lines being replicated by the LRR during the 13-day period in 2004 ({ }) that is covered by the RTC Model simulation. *Id.* at III-C-49 to 50. They identified a total of 19 outages in two categories -- operational outages and track/signal outages -- for which they included time in the RTC Model simulation, assuming that similar

[63] BNSF Reply Exhibit III.B-2, p.16 of 16.

outages would occur for the same time duration on the LRR during the 2024 simulation period. *Id.* at III-C-50 to 56. BNSF agrees with the operational outages identified by WFA/Basins' experts; however, WFA/Basins' experts understated the number of tracks/signal outages that should be included in the RTC modeling.

As WFA/Basin correctly note, the track and signal outages are shown as "trouble tickets" in the data BNSF produced in discovery. *Id.* at III-C-52. WFA/Basin are also correct that some trouble tickets are a report from the field (train crew, track inspector, etc.) to a dispatcher, of an item requiring correction. *Id.* Trouble tickets can also be generated by a dispatcher who is unable to provide clear signals for a train's route as a result of a failure of a switch or track failure in the field. Messrs. Reistrup and Smith reviewed the information provided by BNSF in discovery with respect to trouble ticket items for track and signal problems for the 13-day simulation period and identified 10 outages (eight on the { } Subdivision and two on the { } Subdivision) which they determined should be included in the RTC simulation. *Id.* at III-C-53.

BNSF's expert, Mr. Mueller, reviewed the trouble ticket items for track and signal problems that occurred during the 13-day period in 2004 { } that is covered by the RTC simulation in 2024, and identified an additional ten outages (nine on the { } Subdivision and one on the { } Subdivision) that should be included in the RTC simulation.[64] Each of these outages resulted in signal indications that required trains to comply with restrictive operating rules causing traffic to slow down over the affected segment during the period the outage continued, as explained in further detail below:

- Additional track/signal outages on the { } Subdivision[65]
  - Ticket No. 217357. { }. In this case, there was sand in the switch which obstructed its normal function. As a result of the obstruction, the signal governing this switch would be red, requiring trains to come to a complete stop in advance of the signal and obtain further instructions from the dispatcher before proceeding. The normal procedure would be for the dispatcher to authorize the train to proceed at restricted speed to the next signal. A maintainer cleaned and lubricated the switch and returned it to its normal operating condition. No trains were delayed on the BNSF because no trains passed through the segment of track governed by this signal during the { } that the obstruction continued. If a train had attempted to pass through this segment of track during this period, however, it would have been delayed. Similarly, if a train attempted to pass through this segment of track in the RTC simulation during the period when this outage was occurring, the train would be delayed. Therefore, it is appropriate to include the duration of this outage in the RTC Model simulation.
  - Ticket No. 218338. { } This outage was caused by the switch points

[64] Mr. Mueller reviewed the same list of track/signal outages as Messrs. Reistrup and Smith. Mr. Mueller highlighted in yellow the track/signal outages that occurred during the 13-day simulation period. He highlighted in red the track/signal outages that should be included in the RTC Model simulation. Finally, he highlighted in green in the last column the ten additional outages that Messrs. Reistrup and Smith did not include in the RTC Model simulation. BNSF Reply electronic workpapers { }

[65] BNSF Reply electronic workpaper { }

moving horizontally, which prevented them from closing and completing the circuit in order to display a clear or proceed signal. As a result, the signal governing the movement over this switch would have displayed a red or "stop" indication until a maintainer made the necessary repairs to enable the switch points to make proper contact. Any train approaching the segment of track governed by this red signal would have had to stop and obtain further instructions from the dispatcher, which normally would have been authorization to proceed at restricted speed to the next signal.

- Ticket No. 220154. {

  } As WFA/Basin acknowledged, in this situation the switch points were dragging and were lubricated. WFA/Basin Opening Nar. at III-C-54. As WFA/Basin also acknowledged, there was a report of one train that was delayed by this outage. *Id.* WFA/Basin, however, did not include this outage in the RTC simulation because it asserted that there was "no indication of duration of the event." *Id.* Contrary to WFA/Basins' assertion, a duration of 65 minutes is shown for this event in the next-to-last column of the workpaper.

- Ticket No. 221091. {

  } In this case, a lamp socket was defective so that the green signal governing movement for Eastbound traffic over that segment of track could not be displayed. An eastbound train approaching this signal would have been required to comply with the most restrictive aspect of this signal (red), stop before passing this signal and request authorization from the dispatcher before proceeding.

- Ticket No. 221867. {

  }

  In this case, the switch would not properly line for movement of a train and had to be lubricated to properly perform its function. During the period of the malfunction, the signal governing the switch would have been red, which would have required a train approaching the switch to stop and request authority from the dispatcher prior to proceeding.

- Ticket No. 223320. {

} This is similar to the outage for Ticket No. 221867 above.

- Ticket No. 223591. { } In this case, the switch was lined to allow a crossover movement to an adjacent track, but would not return to normal to enable a train to proceed straight through on the track. During this outage, the signal governing movement over this switch would have given a red signal to traffic in both directions on this track, requiring trains approaching the signal to stop and request authority from the dispatcher before proceeding.

- Ticket No. 224711. { } This is similar to the outage for Ticket No. 223591 above.

- Ticket No. 225696. { } In this case, the outage was caused by a signal that was telegraphing, which meant that the signal was either blinking from red to yellow to green consecutively, or blinking all three colors simultaneously. This was an indication of a defective condition, which is identified in the workpapers as a { } A train approaching a telegraphing signal would have to comply with the most restrictive signal that could be displayed (red), stop and request authority from the dispatcher prior to proceeding. Messrs. Reistrup and Smith did include the outage for Ticket No. 225711, another { } in the RTC simulation.

- Additional outages on the { } Subdivision:[66]

  - Ticket No. 218535. { }. Again, a telegraphing signal either blinks red to yellow to green consecutively, or all three colors simultaneously. In this situation, a train approaching this signal would have to comply with the most restrictive signal aspect (red), stop and request authority from the dispatcher prior to proceeding.

---

[66] BNSF Reply electronic workpaper { }

In summary, the ten additional track/signal outages identified by Mr. Mueller would have resulted in restricted signal indications in the field and imposed operating rule restrictions on traffic moving through the segments of track governed by those signals. Therefore, it is appropriate to include these outages in the RTC Model simulation.

Although the information provided by BNSF in discovery included the date and duration of each of the above outages, it did not list the specific time of day when each outage started. Therefore, Mr. Wheeler generated a random start time for each outage on the date of its occurrence, and used the duration of the outage set out in the information provided in discovery.[67] This is the same approach used by WFA/Basin.[68]

(d) WFA/Basins' Understated LRR Time Requirements

WFA/Basin understated the dwell time required for certain loaded trains at Guernsey Yard and for unloading of coal trains at the LRS, as discussed below.

i) Dwell Time at LRS

WFA/Basin provided a dwell time of eight hours for unloading and inspections of trains at the LRS (broken down into 6.5 hours for loaded trains from arrival through completion of unloading and 1.5 hours for empty trains following completion of loading until departure from the plant). WFA/Basin Opening Nar. at III-C-36 to 37.[69] WFA/Basin stated that, according to

---

[67] BNSF Reply electronic workpapers "Engineering data base - Online failures LRR.xls" and "Random Times Created for Failures.xls."

[68] WFA/Basin Opening electronic workpaper "Random Times Generated for Outages."

[69] WFA/Basin Opening electronic workpaper "LRR OPENING.TRAIN." For example, line 46,775 indicates a 6.5 hour dwell at the LRS unloader for loaded train 33CCORLRP1 and line 47,633 indicates a 1.5 hour dwell on the empty side of the unloader for connecting empty train 33ELRPCOR10.

LRS plant personnel, it normally takes just over six hours from the time of the arrival of the loaded train to complete the coal unloading process. *Id.* at III-C-37. After conferring with LRS personnel and observing operations at the plant, WFA/Basin witnesses Reistrup and Smith determined that an additional two hours is "ample time" to perform additional work on a train prior to its departure for the mines. *Id.* The additional work, which is performed by a third-party contractor responsible for the unloading process at the LRS, includes fueling locomotives, car inspections, removal of bad-order cars from the train and moving them to the repair track, inserting spare/repaired cars into the train to fill it to { } cars and performing the necessary air test. *Id.* WFA/Basin stated that "[t]he LRR will use the same procedures, with the same contractor." *Id.* n.17.

WFA/Basin grossly understated the dwell time for unit coal trains at the LRS. BNSF data provided in discovery for the period from the fourth quarter of 2003 through the third quarter of 2004 shows an actual average dwell time of { } hours at the LRS for the period from the arrival of a loaded train through its release from the unloading process (and excluding the period between the completion of unloading and departure of the empty train to the mainline).[70] When a loaded coal train arrives at the LRS, after pulling the train onto the LRS-owned track, the BNSF crew departs the train and a private contractor takes control of the train through the unloading, inspection, and servicing process. A BNSF crew reboards the empty train after the unloading, inspection and servicing process has been completed and the train is ready to return to the mainline. Therefore, the contractor, and not BNSF, controls the train through the

[70] BNSF Reply electronic workpaper "minetime1.xls," worksheet "power plants." The time at the LRS is broken down into three periods - arrival to spot, spot to release and release to departure. The { } hours includes only the time in the first two periods (through release of the train from the unloading process). It does not include the third period from release of the train from unloading until its departure from the LRS.

unloading, inspection and servicing process. WFA/Basin stated that it intends to continue to use the same private contractor and procedures as presently employed for unloading and inspection at the plant. Thus, the actual unloading, inspection and servicing time experienced at the LRS during the base period -- { } hours -- should also apply to the LRR, rather than the 6.5 hours that WFA/Basin have posited.

BNSF accepts the 1.5 hour dwell time for empty trains at the LRS (between the completion of unloading and the return of the train to the mainline) assumed by WFA/Basin.

ii) Dwell Times for Loaded Trains at Guernsey Yard

WFA/Basin assume a dwell time of 45 minutes for all loaded trains at Guernsey Yard. WFA/Basin Opening Nar. at III-C-42 to 44. This dwell time is appropriate for a loaded train that is only undergoing a crew change and interchange. If additional activities are performed on the loaded train, however, BNSF's expert Mr. Mueller has determined that additional dwell time is required.[71]

WFA/Basins' witnesses Reistrup and Smith allotted 45 minutes for the performance of fueling and crew change/interchange functions on loaded coal trains (including the performance of a "roll-by" inspection) at Guernsey Yard. WFA/Basin Opening Nar. at III-C-43. They explained that all empty trains depart Guernsey Yard with fully-fueled locomotives and, therefore, the loaded trains return to the yard with fuel only partially depleted -- having used an

[71] BNSF accepts WFA/Basins' assumption of a six-hour dwell time for empty trains at Guernsey Yard. WFA/Basin Opening Nar. at III-C-41 to 42.

average of 827 gallons out of the 4,800 gallons of fuel an SD70MAC tank holds.[72] *Id.* They asserted that topping off locomotive fuel tanks on a loaded train with an average of 827 gallons takes less than 15 minutes, and adding a fourth locomotive at the rear of the train takes no more than that. *Id.* They further asserted that the fourth locomotive can be added during the crew change process, for which they allotted 30 minutes. *Id.* Thus, they concluded that the total process takes not more than 45 minutes, the dwell time they designated for loaded trains at Guernsey Yard. *Id.*

For loaded trains requiring fueling (but not adding a fourth locomotive) at Guernsey Yard, Mr. Mueller determined that the dwell time should be increased from 45 minutes to 1 hour to reflect the additional time required for fueling all three of the locomotives. The lead two locomotives will need to be spotted at one of the two mainline fueling facilities WFA has provided. All of the loaded trains operating on the LRR have a 2/1 DP arrangement and therefore require a fuel truck to fuel and service the rear locomotive. The fueling functions cannot begin at either end of the train until proper blue flag protection has been provided, which requires that employees proceed to the switches, or derails, at both ends of the tracks, line and lock them and display blue flags. Additionally, the access to the rear locomotive with the fuel truck will frequently be blocked by other loaded trains arriving and empty trains departing.

As an additional matter, WFA/Basins' RTC Model simulation did not include all loaded trains that fuel at Guernsey Yard. WFA/Basins' electronic workpapers identified 78 loaded

---

[72] Messrs. Reistrup and Smith made the unsupported assertion that each locomotive on SD70MAC trains destined to points south of Pueblo consumes an average of 827 gallons of fuel between Guernsey Yard and the mine and return. WFA/Basin Opening Nar. at III-C-43.

trains that are fueled at Guernsey Yard.[73] WFA/Basins' RTC Model simulation, however, only provided for 60 of these loaded trains to be fueled at Guernsey Yard.[74] BNSF corrected this omission by providing for fueling of all 78 trains identified by WFA/Basin in BNSF's RTC Model simulation.[75]

WFA/Basin made one further omission with respect to fueling of loaded trains at Guernsey Yard. WFA/Basins' list of loaded trains to be fueled at Guernsey Yard included most trains destined for Smithers Lake, but inexplicably omitted two of the Smithers Lake loaded trains. BNSF corrected this further omission by providing for fueling at Guernsey Yard of all loaded trains destined for Smithers Lake in BNSF's RTC Model simulation.[76]

Some of the loaded trains at Guernsey Yard require both fueling and the addition of a fourth locomotive to the train. As WFA/Basin explained, trains moving south of Denver on the BNSF use four locomotives in a 2/2 DP configuration. WFA/Basin Opening Nar. at III-C-10 to 11. WFA/Basin concluded that these trains do not require four locomotives while on the LRR. *Id.* Therefore, WFA/Basins' operating plan provides that an empty train with four locomotives interchanged with the LRR at Guernsey Yard will have one of the locomotives removed at the yard. The train will travel round trip to the mines on the LRR with three locomotives in a 2/1 DP configuration. When the corresponding loaded train headed for a destination south of Denver

---

[73] WFA/Basin Opening electronic workpaper "LRR Fuel Usage at Guernsey.xls," worksheet "Peak_Loaded_Trains."

[74] WFA/Basin Opening electronic workpaper "LRR OPENING.TRAIN"; BNSF Reply electronic workpaper "Guernsey loads in WFA RTC.xls."

[75] BNSF Reply electronic workpaper "Guernsey Loaded Dwells.xls."

[76] *Id.*

returns to Guernsey Yard from the mines, a fourth locomotive will be added to the train before it is interchanged to BNSF. *Id.*

Mr. Mueller determined that an additional half hour is required to add this fourth locomotive to a loaded train. Addition of this locomotive cannot be performed in conjunction with the fueling activities due to the blue flag restrictions on the train while it is being fueled. Therefore, the fourth locomotive must be added prior to or after fueling. This fourth locomotive will be moving from the service area near the middle of the yard to the extreme west end of the yard and coming back down the mainline to the rear of the train on the mainline fuel track. The blue flag requirements have to be removed by the mechanical workers prior to the locomotive entering the mainline fuel track. The Manager of Yard Operations and the dispatcher have to coordinate the movement out of the yard and back into the yard on the mainline fuel tracks, in conjunction with all the other loaded trains arriving and empty trains departing. After coupling to the rear of the train, the mechanical workers will have to link this locomotive to the one already on the train and perform the required tests to ensure it is operating properly. Therefore, he increased the dwell time at Guernsey Yard for loaded trains that are undergoing both fueling and addition of a fourth locomotive to 1.5 hours.

(e) Correction of Erroneous Elevations

WFA/Basin used erroneous elevations at several locations on the LRR. For example, WFA/Basin used erroneous elevations along Whitetail Hill between MP 4.0 and 7.8 on the Orin Subdivision[77] that resulted in a more gentle grade than in the real world. Actual grades on this hill are 1.40%, yet WFA/Basin modeled grades of only 1.124%. The discrepancy lies in the

[77] WFA/Basin Opening electronic workpaper "LRR OPENING.NODE."

elevations entered into the model. The BNSF track charts provided in discovery show that the actual elevation at milepost 7.8, for example, is 4,735.30 feet.[78] The same milepost in WFA/Basins' RTC Model, however, has an elevation of 4,705.1 feet. The nodes all along this hill are in error, resulting in erroneous grades. With heavy coal train operations, grades have a significant impact on performance and must be modeled accurately. BNSF corrected the LRR's elevations to match the elevations in the BNSF track charts provided in discovery.[79]

(f) Correction of Signals

Signals were incorrectly coded at a number of locations on the LRR in WFA/Basins' Opening RTC Model simulation. The incorrectly coded signals resulted in overlapping signal blocks which, in turn, provided conflicting directions to the RTC Model simulation. There are over 100 signal block errors in WFA/Basins' RTC Model simulation.[80] BNSF corrected all of the codings for signals in its RTC simulation.[81]

(g) Correction of WFA/Basin's Failure to Remove Helper Locomotives

WFA/Basin provided helper service for loaded coal trains moving north on the Orin Subdivision to the Campbell interchange between milepost ("MP") 15.4 and MP7.8 on the Orin Subdivision. WFA/Basin Opening Nar. at III-C-18. For seven loaded coal trains (3CCABSAM1 through 3CCABCAM7) receiving helper service in this district, however, WFA/Basin failed to

[78] BNSF Reply electronic workpaper "System Grade Data Dec 2004.xls," WFA/Basin Opening workpapers, Volume 6, p. 03958.

[79] BNSF Reply electronic workpaper "BNSF_REPLY_LRR_FINAL.NODE."

[80] BNSF Reply electronic workpaper "SIGNAL ERRORS IN WFA.doc."

[81] BNSF Reply electronic workpaper "BNSF_REPLY_LRR_FINAL.SIGNAL."

remove the helper locomotives at MP 7.8 and instead left the helper locomotives on the trains until the Campbell interchange.[82] Mr. Wheeler corrected this error in his RTC Model simulation by removing the helper locomotives from these trains at MP 7.8.

(h) BNSF's Corrections to Train Count

BNSF made three corrections to WFA/Basins' peak period train count to correct for apparently inadvertent omissions, WFA/Basins' erroneous treatment of the trains destined for the Scherer Plant, and to reflect the different escalation factors used by WFA/Basin and BNSF for certain traffic.

WFA/Basins' list of peak year trains in its electronic workpapers included five trains (four base year peak period trains and one growth train) that WFA/Basin inexplicably failed to include in its RTC Model simulation.[83] In addition, WFA/Basin failed to create a growth train for one of the aforementioned base year peak period trains (Train E0KCLBTM70A).[84] BNSF corrected this omission by adding all six trains to its RTC Model simulation.[85]

BNSF began moving the Scherer traffic on January 1, 2004. Therefore, in discovery, BNSF only provided data for Scherer trains for the first three quarters of 2004, and not for the third quarter of 2003. WFA/Basin asserted that, because there was not a full year's worth of

---

[82] WFA/Basin Opening electronic workpaper "LRR OPENING.TRAIN."

[83] WFA/Basin Opening electronic workpaper "Base Year Trains.xls," worksheet "Peak Year Calculation."

[84] *Id.*

[85] BNSF Reply electronic workpaper "BNSF Reply RTC model train list.xls."

base period traffic, all of the Scherer traffic for the base period should be treated as new traffic.[86] Thus, instead of using actual Scherer trains during the peak period of the base year, WFA/Basin randomly generated trains for the Scherer traffic for the peak period of the base year, thereby eliminating the peaking effect. Based upon this approach, WFA/Basin included 35 peak period base year trains for Scherer traffic in its RTC Model simulation.[87]

WFA/Basin were in error to treat the Scherer trains as new traffic. The information provided by BNSF in discovery included all of the actual Scherer trains that moved during the peak period selected by WFA/Basin.[88] BNSF corrected WFA/Basins' error by eliminating the 35 Scherer trains randomly generated by WFA/Basin and replacing them in the RTC Model simulation with the actual Scherer trains that moved during the peak base period (37 trains).[89] To reflect the increase in traffic between the base year and the peak year, BNSF also added four growth trains for the Scherer traffic for the peak simulation period using the same methodology as WFA/Basin for determining growth trains.[90]

As discussed in Section III.A. above, BNSF used different escalation factors than WFA/Basin to determine the increase in tonnage for certain destinations between the base period and peak period. BNSF determined the number of growth trains attributable to these increases in

---

[86] WFA/Basin Opening electronic workpaper "Base Year Trains.xls," worksheet "GrowthFactors," cell E111.

[87] WFA/Basin Opening electronic workpaper "Base Year Trains.xls," worksheet "New Trains."

[88] BNSF Reply electronic workpaper "Base Year Trains (BNSF Reply).xls," worksheet "Peak Year Calculation."

[89] BNSF Reply electronic workpaper "BNSF Reply RTC model train list.xls."

[90] *Id.*

tonnage.[91] As a result, in its RTC Model simulation, BNSF made changes to the growth trains used by WFA/Basin in its RTC simulation for seven destinations.[92]

(i) WFA/Basins' Operating Inputs to the RTC Model Accepted by BNSF

BNSF accepts the following operating inputs used by WFA/Basin in its RTC Model simulation of the LRR[93]:

- Road locomotives - Three SD70MACs in a 2/1 DP configuration on each train while on the LRR (with one exception for certain shorter trains for which WFA/Basin use two SD70MACs in a 1/1 DP configuration).
- Train size and weight - Use of the actual size and trailing weight for each 2004 BNSF train carrying traffic in the LRR traffic group, growth trains that replicate trains that moved in 2004, and maximum train size of 136 cars and three locomotives.
- Helpers - WFA/Basins' helper districts and assumption of 20 minutes to add a helper locomotive and 15 minutes to detach a helper locomotive.
- Maximum train speeds - WFA/Basins' use of a maximum train speed of 60 mph for empty coal trains and 50 mph for loaded coal trains on the

[91] BNSF Reply electronic workpaper "Base Year Trains (BNSF Reply).xls," worksheet "Peak Year Calculation."

[92] BNSF Reply electronic workpaper "BNSF Reply RTC model train list.xls."

[93] WFA/Basin Opening Nar. at III-C-30 to 31.

mainline and Moba Branch (conditions permitting), and a maximum speed of 35 mph on the Campbell and Reno Branches.

- Dwell time at origin mines - A 5.5 hour dwell time for mines located on the Orin Subdivision and the Reno Branch, and six hours for mines located on the Campbell Branch.
- A six-hour dwell time for empty trains at Guernsey Yard, as discussed above.
- A time of 30 minutes to interchange trains with BNSF at points other than Guernsey.
- A time of 15 minutes for crew changes at crew-change points other than interchange points.
- WFA/Basins' assumption that no time will be required for track inspections and maintenance windows during the peak simulation period.

In addition, BNSF accepts the peak week selected by WFA/Basin { } and modeling period of { }.[94] BNSF also accepts WFA/Basins' decision to start each train cycle during the simulation period with the arrival of the empty train at the interchange point to the LRR (in the case of cross-over traffic) or, in the case of the Laramie River traffic, on the release of the empty train at the LRS.[95]

(j) Update of RTC Model

[94] *Id.* at III-C-26 to 28.

[95] *Id.* at III-C-28.

When BNSF used the version of the RTC Model employed by WFA/Basin (version 71F) for its simulation, BNSF discovered that the model did not effectively use the capacity built by WFA/Basin at the Reno Yard on the Reno Branch, and at one siding located near Reno Junction, as being available for staging of empty trains on route to the mines. Mr. Wheeler informed Berkeley Software, the developer of the RTC Model, of this problem. Berkeley Software issued an update to the RTC Model (designated version 78C) to correct this problem. It is BNSF's understanding that Berkeley Software has made the updated version of the RTC Model available to all other purchasers of the RTC Model.

(k) Results of BNSF's RTC Model Simulation

Mr. Wheeler simulated the performance of the LRR traffic group as revised by BNSF using the corrections described above and the configuration proposed by WFA/Basin for the LRR.[96] Mr. Wheeler determined that the track configuration proposed by WFA/Basin was sufficient for the revised traffic group without any modifications (other than those discussed in Sections III.B.1 and 2 above).[97]

---

[96] BNSF Reply electronic workpaper "BNSF REPLY FINAL LRR.zip."

[97] Mr. Wheeler's RTC Model simulation assumed the LRR included the additional mine spur at the North Antelope/Rochelle mine. Mr. Wheeler coded his RTC Model simulation to bring trains using this second south lead in and out of the mine at a point above the lead. Therefore, it was not necessary to physically build the second lead for the RTC Model simulation.

Mr. Wheeler provided summary data from BNSF's simulation to Mr. Plum to use in calculating the LRR's equipment and crew requirements.[98] These operating costs are discussed in Sections III.C. and III.D. of the Narrative.

b. Mainline

BNSF accepts WFA/Basins' configuration and track miles for the LRR's mainline with the addition of only 0.02 track miles as discussed in Section III.B.2 above. WFA/Basin propose to use standard new 136-pound continuous welded rail ("CWR") for all mainline track and passing sidings, with premium (head-hardened) rail used on the mainline between Donkey Creek and Guernsey. WFA/Basin Opening Nar. at III-B-6. As explained in Section III.F.3.d. below, BNSF uses 136-pound standard CWR for all mainline track and passing sidings and 141-pound premium CWR on all curves of three degrees or more.

c. Branch Lines

BNSF accepts WFA/Basins' configuration and track miles for the LRR's three branch lines (Campbell Branch, Reno Branch and Moba Branch). WFA/Basin propose to use standard 136-pound CWR on the main tracks for the branch lines, with the use of premium rail on the portions of the Reno Branch between Reno Jct and Black Thunder Jct and in curves of three degrees or more. WFA/Basin Opening Nar. at III-B-6 to 7. As explained in Section III.F.3.d. below, BNSF uses 136-pound standard CWR on all branch line tracks, with 141-pound premium track on all curves of three degrees or more.

---

[98] Mr. Wheeler used a report generator to develop data summaries for Mr. Plum. The report generator is included in BNSF's workpapers along with a tutorial program. BNSF Reply electronic workpapers "RTCReport.exe," "Reportgenerator_tutorial.PPT," and "BNSF REPLY FINAL LRR.xls."

d. Other tracks

As discussed in Section III.B.1. above, BNSF added an aggregate of 1.43 miles of lead tracks at the North Antelope/Rochelle and Ft. Union Mines and Moba Junction. As discussed in Section III.B.2. above, BNSF added 13.59 miles of extensions to set-out tracks at failed equipment detectors to accommodate bad-order cars and MOW equipment and for additional setout tracks at dragging equipment detectors. BNSF accepts the interchange tracks, helper pocket tracks, and MOW equipment storage tracks proposed by WFA/Basin for the LRR.

WFA/Basin propose to use 136-pound premium CWR for interchange tracks for loaded trains at Donkey Creek and Guernsey Yards, and 115-pound relay CWR for all other interchange tracks, and for helper pockets, setout and MOW equipment storage tracks. WFA/Basin Opening Nar. at III-B-8 to 9. As explained in Section III.F.3.d. below, BNSF uses 136-pound standard CWR for interchange tracks at Donkey Creek and Guernsey Yard, and 141-pound premium CWR on all curves of three degrees or more. BNSF uses 115-pound relay CWR for all other interchange tracks and for helper pockets, setout and MOW equipment storage tracks.

3. Yards

a. Location and Purpose

BNSF accepts the location and purpose of LRR's three yards at Guernsey, Donkey Creek and South Logan as proposed by WFA/Basin. WFA/Basin Opening Nar. at III-B-9 to 13. BNSF also accepts the facilities proposed by WFA/Basin at each of these yards, with the modifications identified in Section III.F.7. below.[99]

b. Miles and Weight of Yard Track

The LRR's yards as proposed by WFA/Basin contain a total of 41.70 miles of track. WFA/Basin Opening Nar. at III-B-13. BNSF adds 0.68 miles of track outside of the locomotive shop at Guernsey Yard for holding inbound and outbound locomotives prior to entering and after leaving the shop. WFA/Basin proposes to use 136-pound standard CWR for eastbound (loaded train) yard tracks at Donkey Creek Yard and 115-pound relay CWR for all other yard tracks. WFA/Basin Opening Nar. at III-B-13. As discussed in Section III.F.3.d. below, BNSF uses 136 pound standard CWR track for interchange tracks (and mainline) at Donkey Creek and Guernsey Yard with 141 pound premium CWR used on all curves of three degrees or more. BNSF uses 115 pound relay CWR for all other yard and interchange tracks.

4. Other

a. Joint Facilities

The LRR route has no joint facilities. WFA/Basin Opening Nar. at III-B-14.

b. Signal/Communication System

---

[99] BNSF's witness Mr. Mueller determined that the LRR could expect approximately { } percent of its locomotive fleet, or approximately 11 locomotives, to be in the shop for repair or scheduled maintenance every day based on historical BNSF data for SD70MAC and SD40-2 locomotives. BNSF Reply electronic workpaper "Combined Bad Order Margin Analysis.xls." Therefore, Mr. Mueller advised BNSF's engineering witness, Mr. Primm, to design the LRR's locomotive maintenance shop at Guernsey to handle 11 locomotives a day. There was no "layup" track in the vicinity of the locomotive maintenance facility and Mr. Mueller advised Mr. Primm to provide a track to be used for staging inbound and outbound locomotives at the shop.

BNSF accepts WFA/Basins' assumption of a CTC traffic control system for all of the LRR's lines (including the branch lines), with power switches that are controlled by centralized dispatchers located at the railroad's Guernsey headquarters. BNSF also accepts WFA/Basins' use of power switches for the helper pocket tracks, the relay tracks in Donkey Creek Yard, and the connection to the LRS spur at Moba Junction. BNSF also accepts WFA/Basins' use of hand-thrown switches for all other switches (i.e., other interior yard switches and set-out track switches). WFA/Basin Opening Nar. at III-B-14.

The LRR's signal and communication systems are discussed in more detail in Section III.F.6 below.

c. Turnouts, FEDs and AEI Scanners

The use of turnouts, failed equipment detectors, and AEI scanners on the LRR are discussed in Sections II.F.3. and III.F.6.

C. Operating Plan

WFA/Basins' operating plan for the LRR is based in large part on their RTC Model simulation. BNSF addressed the assumptions used by WFA/Basin in their modeling in Section III.B. of this Narrative. As described in Section III.B., BNSF made a number of changes to WFA/Basins' modeling assumptions to reflect real-world conditions. BNSF ran its own RTC Model simulation based upon its revised modeling assumptions. BNSF used the transit times generated by its revised RTC Model simulation to determine the LRR's locomotive and railcar requirements, as discussed below.

WFA/Basin uses the assumed peak year traffic on the LRR to derive operating statistics and operating costs. WFA/Basins' peak year (2024) traffic for the LRR totals 220.04 million net tons of coal. WFA/Basin Opening Nar. at III-C-2, Table III-C-1. As discussed in Section III.A. above, BNSF modified the LRR's peak year traffic. BNSF's peak year traffic for the LRR totals 217.82 million net tons.[1]

Table III.C-1 below is a comparison of WFA/Basins' and BNSF's peak year traffic for the LRR:

[1] BNSF Reply electronic workpaper "LRR Annual Statistics (BNSF Reply).xls," worksheet "SARR Traffic_2024."

TABLE III.C-1

COMPARISON OF WFA/BASIN AND BNSF PEAK YEAR (2024) TRAFFIC FOR LRR

Coal Traffic	WFA/Basin Net Tons (Millions)[1]	BNSF Net Tons (Millions)[2]
Local (moves to LRS)	{ }	{ }
Interline forwarded - southbound[3]	{ }	{ }
Interline forwarded - northbound[4]	{ }	{ }
Total	220.04	217.82

[1] WFA/Basin Opening Nar. at III-C-2, Table III-C-1.

[2] BNSF Reply electronic workpaper "LRR Annual Statistics (BNSF Reply).xls," worksheet "Segment Data." Tons for each segment do not sum to total tons due to rounding.

[3] Originated traffic moving to the LRR/BNSF interchange points at Orin Jct., Guernsey and Moba Jct.

[4] Traffic originated at mines served by the Orin Subdivision, Reno Branch and Campbell Subdivision moving to the LRR/BNSF interchanges at Donkey Creek and Campbell.

1. General Parameters

a. Traffic Flow and Interchange Points

BNSF generally accepts the traffic flow and interchange points assumed by WFA/Basin, modified to reflect BNSF's changes to the LRR's peak year traffic as discussed in Section III.A.

Table III.C-2 below compares WFA/Basins' and BNSF's 2024 traffic volumes for the LRR's principal line segments (in both net and gross tons).

TABLE III.C-2

COMPARISON OF WFA/BASIN AND BNSF TRAFFIC DENSITY BY LINE SEGMENT

Line Segment[1]	WFA/Basin[2]		BNSF[3]	
	Net Tons (Millions)	Gross Tons (Millions)	Net Tons (Millions)	Gross Tons (Millions)
Campbell Branch	{ }	{ }	{ }	{ }
Reno Branch	{ }	{ }	{ }	{ }
Donkey Creek - Orin Jct.	{ }	{ }	{ }	{ }
Orin Jct. - Wendover	{ }	{ }	{ }	{ }
Wendover - Guernsey	{ }	{ }	{ }	{ }
Wendover - Moba Jct.	{ }	{ }	{ }	{ }

1 Tonnages shown for a line segment are the maximum tonnages moving over any part of the segment; volumes are not uniform for the entire segment in some cases.

2 WFA/Basin Opening Nar. at III-C-3, Table III-C-2.

3 BNSF Reply electronic workpaper "LRR Annual Statistics (BNSF Reply).xls."

WFA/Basin state that the LRR serves 16 coal mine origins in the PRB, and one destination power plant (LRS) to which it delivers { } million tons of coal in the peak year. WFA/Basin Opening Nar. at III-C-4. Most of the LRR's coal traffic is cross-over traffic that the LRR interchanges with the residual BNSF and the LRR does not handle any rerouted traffic. *Id.*

WFA/Basin state that in configuring the LRR and designing its operating plan, WFA/Basins' operating experts considered both the total traffic volume moving over various line segments in the peak year (2024) and the peak one-week period { } in that year, and the number of loaded and empty coal trains moving over the various parts of the LRR system during the peak week. *Id.* As discussed in Section III.B.2.a.(2)(b). above, BNSF made some modifications to the LRR's peak week trains.[2]

[2] BNSF Reply electronic workpaper "BNSF Reply RTC model train list.xls."

Table III.C-3 below is a comparison of WFA/Basins' and BNSF's peak period empty coal trains for the LRR.

TABLE III.C-3

COMPARISON OF WFA/BASIN AND BNSF PEAK PERIOD EMPTY TRAINS FOR THE LRR[1]

	WFA/Basin[2]			BNSF[3]		
Line Segment	**Total Trains in Study Period**	**Average Daily Trains in Study Period**	**Peak-Day Trains[4]**	**Total Trains in Study Period**	**Average Daily Trains in Study Period**	**Peak Day Trains[5]**
Campbell Branch	{ }	{ }	{ }	{ }	{ }	{ }
Reno Branch	{ }	{ }	{ }	{ }	{ }	{ }
Donkey Creek to Converse Jct.	{ }	{ }	{ }	{ }	{ }	{ }
Converse Jct. to Orin Jct.	{ }	{ }	{ }	{ }	{ }	{ }
Orin Jct. to Wendover	{ }	{ }	{ }	{ }	{ }	{ }
Wendover to Guernsey	{ }	{ }	{ }	{ }	{ }	{ }
Wendover to Moba Jct.	{ }	{ }	{ }	{ }	{ }	{ }

[1] Table shows empty coal trains only. A corresponding number of loaded coal trains also moved in each period.

[2] WFA/Basin Opening Nar. at III-C-5, Table III-C-3.

[3] BNSF Reply electronic workpaper "BNSF REPLY FINAL LRR (07-11-05).xls."

[4] Peak day for WFA/Basin is { }, 2024. Count excludes empty trains that were stopped for loading at mines at 00:00 hours on September 5, when count began. WFA/Basin Opening Nar. at III-C-5, Table III-C-3, n.2.

[5] Peak day for traveling empty trains in BNSF's RTC Model is { } 2024.

b. Track and Yard Facilities

As discussed in Section III.B.2. above, BNSF accepts the track and yard facilities for the LRR proposed by WFA/Basin with four adjustments -- (1) the addition of 1.43-miles of track for a second south lead at the North Antelope/Rochelle mine, a lead to the Ft. Union mine and the lead to the clearance point at Moba Junction, (2) the addition of 13.59 of extensions to DED and FED setout tracks, (3) the addition of 0.68 miles of locomotives outside of the locomotive shop at Guernsey Yard for holding locomotives inbound to and outbound from the shop, and (4) the addition of 0.02 miles to the LRR mainline when BNSF replicated the LRR. *See* BNSF Reply Exhibit III.B-1.

BNSF also accepts WFA/Basins' proposals to:

- Construct LRR's mainline tracks to a standard that allows maximum train speeds of 60 mph, conditions permitting.
- Limit loaded coal trains to a maximum speed of 50 mph and provide for empty trains to move at up to 60 mph, except on the Campbell and Reno Branches where all trains are limited to a maximum speed of 35 mph.
- Construct the LRR's tracks to permit a maximum GWR of 286,000 pounds per car.
- Use of 25-foot track centers in multiple-track territory to facilitate train operations on one track while maintenance is being performed on the other track.

WFA/Basin Opening Nar. at III-C-6 to 7.

- Equip the entire LRR system with CTC and mainline power switches.

As discussed in Section III.F.3.c. below, BNSF does not accept WFA/Basins' proposal to use wood crossties on all LRR tracks. WFA/Basin Opening Nar. at III-C-7. Instead, BNSF uses concrete ties at locations where BNSF currently has concrete ties.

c. Trains and Equipment

(1) Train sizes

BNSF generally accepts the parameters established by WFA/Basin in their narrative concerning trains and equipment, including that the LRR will operate only unit coal trains, the train sizes will be the same as those presently operated (i.e., during the base period) by BNSF, that train sizes and locomotive consists will remain the same throughout the 20-year DCF period, and that increased volumes are accounted for by adding trains for each O/D pair that are equivalent to the size of the trains BNSF operated in 2004. WFA/Basin Opening Nar. at III-C-7 to 8.

(2) Locomotives

WFA/Basin assert that the LRR requires a total of 118 locomotives to handle its peak period traffic volume. WFA/Basin Opening Nar. at III-C-8. This includes 105 SD70MAC locomotives for road service and 13 EMD SD40-2 locomotives for helper, work train and yard switching service. *Id.* BNSF agrees that the LRR will require 13 SD40-2 locomotives. WFA/Basin, however, understate the number of road locomotives required by the LRR.

Table III.C-4 compares the LRR's locomotive requirements as determined by BNSF and WFA/Basin.

TABLE III.C-4

COMPARISON OF WFA/BASIN AND BNSF PEAK LOCOMOTIVE REQUIREMENTS FOR LRR

Type of Service	WFA/Basin Locomotive Numbers[1]	BNSF Locomotive Numbers[2]
Road (SD70MAC)	105	121
Helper/Switch/Work Train (SD40-2)	13	13
Total	118	134

1 WFA/Basin Opening Nar. at III-C-8, Table III-C-4.

2 BNSF Reply electronic workpaper "LRR Operating Statistics (BNSF Reply).xls," worksheet "Peak to Base Summary."

(a) Road Locomotives

BNSF accepts WFA/Basins' proposals to:

- Use SD70MAC locomotives to power unit coal trains, with each coal train utilizing three SD70MAC locomotives in a 2/1 DP configuration (with one exception for a few short, 75-car trains that originate at mines on the Campbell Branch and move to the LRR/BNSF interchange at Campbell, which use two locomotives in a 1/1 DP configuration).[3]

- Remove at Guernsey Yard the fourth unit on empty BNSF trains interchanged to LRR at Guernsey with four road locomotives in a 2/2 configuration, travel

[3] WFA/Basin Opening Nar. at III-C-9 to 10.

on the LRR with three locomotives, and add a fourth unit to the corresponding loaded train prior to departure from Guernsey on the residual BNSF.[4]

- Use three SD70MAC locomotives in a 2/1 configuration on coal trains moving to the LRS, rather than using four locomotives for these trains as BNSF does.[5]

- Use run-through service for all of the LRR's interline trains.[6]

i) Road Locomotive Count

BNSF's witness Mr. Plum found that WFA/Basins' determination that the LRR will require 105 road locomotives understates the LRR's requirements.

WFA/Basin made two separate calculations of road locomotive requirements. In its first calculation, WFA/Basins' experts calculated LRR road locomotive requirements based on annualizing peak week locomotive hours from their RTC analysis. WFA/Basins' experts began by determining the locomotive hours for each train during the peak week of the peak year, based upon the average cycle time for each O/D pair generated by WFA/Basins' RTC Model simulation. WFA/Basins' experts then added the locomotive hours for all of the trains during the peak week, resulting in a total of 16,044 locomotive hours during the peak week. To annualize locomotive hours, WFA/Basin multiplied the peak week locomotive hours by 366/7 (for the leap year 2024), resulting in an annual figure of 838,907 locomotive hours. They then divided this figure by 366 x 24 (total hours in a leap year) and then rounded up to determine the number of

---

[4] *Id.* at III-C-10 to 11.

[5] *Id.* at III-C-11 to 12.

[6] *Id.* at III-C-12 to 13.

locomotives required to meet the locomotive hour demand - 96 locomotives. WFA/Basin then applied a locomotive spare margin of 8.6% to produce a final count of 105 road locomotives. WFA/Basin Opening Nar. at III-C-14 to 15.

WFA/Basins' second calculation used the methodology applied by the Board in *Xcel II*. WFA/Basin used the following steps to apply this methodology. First, it calculated total annual locomotive hours for all of the LRR's peak year coal traffic not based on annualizing the peak week, but rather based upon the actual number of trains required in the peak year to deliver the peak year's traffic. WFA/Basin applied to each train the cycle times for each O/D pair derived from LRR's peak week RTC simulation. WFA/Basin then divided this annual locomotive hours number (739,942) by 366 x 24 (total hours in a leap year) and then rounded up to determine the number of locomotives required to meet the locomotive hour demand -- 84 locomotives (which did not include either a spare margin or a peaking factor). WFA/Basins' experts then derived a peaking factor supposedly using the *Xcel II* approach. Specifically, it compared the number of trains in the peak week to the average number of trains per week for the peak year. This produced a 14.3% peaking factor. WFA/Basin applied both the 14.3% peaking factor and the 8.6% spare margin to the count of 84 locomotives determined in its first step, producing a total locomotive count of 105 locomotives in the peak year - the same number of locomotives WFA/Basin calculated under its first methodology based upon annualizing peak week locomotive hours over the entire peak year. *Id.* at III-C-15 to 16.

To adjust the peak year to base year locomotive requirements, WFA/Basin used the ratio between its peak year net ton projections and base year net ton projections. WFA/Basins' deflator methodology used the same approach as the Board accepted in *TMPA* and BNSF used in *Xcel*. *Id.* at III-C-16.

The *Xcel II* methodology was developed to address what the Board considered to be a flaw in BNSF's proposed methodology in that case. In *Xcel II*, the Board concluded that "requiring the SARR to have enough locomotives to handle the peak day is an unrealistic standard in this case." *Xcel II* at 13. BNSF does not agree with the Board's rationale in *Xcel II* for rejecting a peaking factor based on peak day locomotive requirements. BNSF, nevertheless, follows the Board's *Xcel II* methodology in this case.

WFA/Basin failed to use the correct number of peak week trains to calculate the peaking factor. WFA/Basin used a peak week train count of 328.[7] WFA/Basins' use of only 328 peak week trains is unsupported. According to WFA/Basins' workpapers, the correct number should be 333.[8] When the correct number of peak week trains, 333, is compared to the average number of trains per week, 287, the corrected peaking factor increases to 16.0%.

In addition to correction of the peaking factor calculated by WFA/Basin, BNSF used the revised transit times from its RTC Model simulation in place of WFA/Basins' assumed transit times. BNSF's modifications to the assumptions used in WFA/Basins' RTC analysis were described in detail in Section III.B. of this Narrative and are not repeated here. By using operating assumptions that are more consistent with the real-world operating conditions, BNSF's RTC analysis produced somewhat longer transit times. The revised transit times are set out in BNSF Reply electronic workpaper "LRR Annual Statistics (BNSF Reply).xls," worksheet "Transit Times." BNSF also recalculated the peaking factor based upon BNSF's traffic for the LRR, which produced a 15.9% peaking factor.[9]

---

[7] WFA/Basin Opening Nar. at III-C-15.

[8] WFA/Basin Opening electronic workpaper "Base Year Trains.xls," worksheet "Summary," cell O351.

[9] BNSF Reply electronic workpaper "LRR Operating Statistics (BNSF Reply).xls."

Applying the 8.6 percent spare margin and a 15.9% peaking factor, Mr. Plum determined that the LRR would require a total of 121 SD70MAC locomotives in the peak year.[10]

(b) Helpers

BNSF accepts the helper districts, helper assignments, and number of helper locomotives (six helper locomotives on three 2-unit consists) specified by WFA/Basin in its Opening Evidence. WFA/Basin Opening Nar. at III-C-17 to 19. BNSF also accepts the use of SD40-2 locomotives for helper service. *Id.*

WFA/Basins' RTC simulation identified a total of 209 loaded trains moving during its 13-day simulation period that required helper assistance. *Id.* at III-C-18. In the same 13-day simulation period, BNSF's RTC simulation identified 220 loaded trains that required helper assistance. First, due to the corrected elevations to WFA/Basins' Opening RTC Model, two additional trains (29CRAWGUE1 and 29CRAWGUE2) from WFA/Basins' RTC Model simulation required helper service in the southbound direction from the Campbell Subdivision to the northern part of the Orin Subdivision (Whitetail Hill).[11] Second, additional trains that were added to the RTC Model while correcting WFA/Basins' peak period train count, such as trains destined for the Scherer plant and new "growth" trains, were also found to require helper assistance.[12] BNSF added two SD40-2 locomotives to each of these trains, using the helpers stationed by WFA/Basin near Donkey Creek. Providing helper service for these trains did not require adding any helper locomotives or creating a new helper district.

---

[10] BNSF Reply electronic workpaper "LRR Operating Statistics (BNSF Reply).xls," worksheet "Peak to Base Summary."

[11] BNSF Reply electronic workpaper "BNSF REPLY FINAL (07-11-05).xls.

[12] BNSF Reply electronic workpaper "BNSF REPLY FINAL LRR (07-11-05).xls," worksheet "BNSF REPLY FINAL LRR."

Table III.C-5 below compares the number of loaded trains requiring helper service on the LRR during the simulation period and peak week.

TABLE III.C-5

COMPARISON OF LRR PEAK TRAINS REQUIRING HELPER ASSISTANCE AS DETERMINED BY WFA/BASIN AND BNSF

	WFA/Basin[1]		BNSF[2]	
Movement segment	**Simulation Period**	**Peak Week**	**Simulation Period**	**Peak Week**
Campbell Branch mines to Donkey Creek interchange	29	16	28	17
Campbell Branch mines to MP 9.8 on Orin Subdivision	8	5	11	7
Northbound trains on Orin Subdivision	172	96	181	101
Total	209	117	220	125

[1] WFA/Basin Opening Nar. at III-C-18, Table III-C-5.

[2] BNSF electronic workpaper "BNSF REPLY FINAL LRR (07-11-05).xls," worksheet "helper selection."

(c) Switch/Work Train Locomotives

BNSF accepts the numbers and location of SD40-2 locomotives that WFA/Basin has designated for switching and work trains (six SD40-2 locomotives and one spare) identified by WFA/Basin and BNSF. WFA/Basin Opening Nar. at III-C-20. BNSF, however, does not accept the number of switch crew personnel provided by WFA/Basin. WFA/Basin calls for two full-time switch crew assignments working 12 hour shifts at Guernsey, but provides only five people to staff these positions.[13] BNSF accepts the assignment of two full-time switch crews on 12 hour shifts, but 11 people, not 5, are required to staff these positions.[14]

WFA/Basin did not provide train crews for work trains. BNSF's operating witness Loren Mueller provided two train crew personnel for work trains based on the annual work train hours specified by BNSF's MOW expert, Mr. Albin.

(3) Rail Car Requirements

WFA/Basin determined that the LRR would require 448 railcars.[15] This understates the LRR's requirements because of various deficiencies in LRR's methodology, as discussed below.

WFA/Basin began its determination of the LRR's railcar requirements by identifying the railcars for which the LRR would be responsible. WFA/Basin Opening Nar. at III-C-22. WFA/Basin then calculated the total number of hours those railcars would be on its system during the peak week (based upon the cycle times for each O/D pair generated by its RTC Model simulation). WFA/Basin annualized the peak week railcar hours by multiplying by 366/7 (representing the number of weeks in the peak year). WFA/Basin then divided this number by 366 x 24 (the number of hours in the peak year) to determine the base railcar requirement.[16] Finally, WFA/Basin added a five percent spare margin.[17]

---

[13] WFA/Basin Opening Nar. at III-C-20 to 21; WFA/Basin Opening electronic workpaper "LRR Operating Statistics.xls," worksheet "Summary."

[14] BNSF Reply electronic workpaper "switch crews.xls."

[15] WFA/Basin Opening electronic workpaper "LRR Operating Statistics.xls."

[16] WFA/Basin Opening electronic workpaper "LRR Operating Statistics.xls," worksheet "Summary."

[17] WFA/Basin Opening electronic workpaper "LRR Operating Statistics.xls," worksheet "Peak to Base Summary, cell C17."

WFA/Basin identified the railroad-owned cars for which the LRR would be responsible in the following manner. If the shipper's contract specified that the railroad is to supply the cars, then WFA/Basin identified all cars for that shipper to that destination as railroad-owned cars.[18] If the shipper's contract stated that the railroad is to supply a certain percentage of the railcars {

}, WFA/Basin allocated this percentage of the railcars to the LRR.[19] WFA/Basin performed no further review to identify railroad-owned cars. WFA/Basins' approach understates the number of railcars for which the LRR is responsible.

BNSF notes that, as discussed at the discovery conference held on May 17, 2005 in this case, WFA/Basin provided BNSF with a list of car initials and asked BNSF to identify which of these initials represented cars for which BNSF is responsible. BNSF performed a special study and provided WFA/Basin with a list of the car initials for which BNSF is responsible. WFA/Basin, however, apparently ignored this list because it did not include in its list of LRR railcars many of the cars with initials identified by BNSF as cars for which it is responsible.

BNSF performed a more detailed review than WFA/Basin of railcars, using the classification of the cars in BNSF's traffic tapes for the base period in discovery as a starting point. The traffic tapes classified the cars into three categories - S (owned by the transporting railroad), F (owned by a foreign railroad), and P (owned by a shipper or leasing company). Based upon this review, Mr. Plum identified additional railcars for which the LRR should be responsible.

---

[18] WFA/Basin Opening electronic workpaper "LRR Operating Statistics.xls," worksheet "Car Ownership."

[19] *Id.*

First, Mr. Plum determined that the LRR should be assigned responsibility for all railcars classified in the F category.[20] A railroad is required to pay a rental fee for an F car that is on its system. LRR should be required to pay this rental fee.

Second, BNSF performed two reviews of railcars for any destinations for which at least 30% of the railcars are classified in the S category. In the first review, BNSF's marketing department checked to determine whether all of the cars on such trains were in fact leased by BNSF and, therefore, also should be assigned to the LRR. For example, WFA/Basin assumed that LRR should not be responsible for any of the railcars destined for the City of Springfield's Brookline and Kissick plants.[21] BNSF's marketing department, however, found that all railcars destined for these City of Springfield plants are, in fact, owned or leased by BNSF. Therefore, BNSF assigned the LRR responsibility for providing all railcars for these destinations.[22]

In the second review of the remaining trains for at which at least 30% of railcars are classified in the S category, BNSF made a more detailed evaluation of car initials to identify additional cars that should be assigned to the LRR.[23] As an example, cars with the initials "FURX" used in service to the Cook terminal are owned by {   } and leased to BNSF.

Finally, for those trains for which less than 30% of the railcars are classified in the S category, Mr. Plum assigned all cars in the S category to the LRR. These are system-owned cars

---

[20] BNSF Reply electronic workpaper "4Q03 - 3Q04 cars summary by OD (SMRTOWCI).xls."

[21] WFA/Basin Opening electronic workpaper ""LRR Operating Statistics.xls," worksheet "Carloads."

[22] BNSF Reply electronic workpaper "4Q03 - 3Q04 cars summary by OD (SMRTOWCI).xls."

[23] *Id.*

which the LRR should be required to provide. Again, this identified additional cars for which the LRR should be responsible.[24]

WFA/Basins' five percent spare margin for railcars is artificially low. WFA/Basin based its five percent spare margin on a selective review of shipper contracts.[25] WFA/Basins' approach to determining a spare margin for railcars is deficient. Indeed, the spare margin for WFA/Basins' own railcar fleet for the LRS service is well in excess of five percent. During the six-month period from October 1, 2004 through March 31, 2005, WFA/Basin used a total of { } different railcars in service to Moba.[26] During this same period, WFA/Basin ran a maximum of { } train sets consisting of { } cars each for a base requirement of { } cars.[27] This represents a spare margin of approximately { }. This approximates the 10% spare margin the Board has previously approved (*Xcel* at 61). A 10% spare margin also should be used in this case.

BNSF also applied to railcars the same peaking factor it developed for locomotives, as discussed above. Railcars are subject to the same fluctuations as locomotives and, therefore, should be subject to the same peaking factor.

With these corrections, BNSF witness Rob Plum determined that the LRR's railcar requirement would be 867 cars.[28]

Table III.C-6 below compares the LRR's railcar requirement as determined by WFA/Basin and BNSF.

---

[24] *Id.*

[25] WFA/Basin Opening electronic workpaper "Railcar Spare from Transp Contracts.xls."

[26] BNSF Reply electronic workpaper "LRS car requirement.xls," worksheet "Summary."

[27] WFA/Basin Opening Nar. at III-C-61.

[28] BNSF Reply electronic workpaper "LRR Annual Statistics (BNSF Reply).xls," worksheet "Summary."

TABLE III.C-6 COMPARISON OF LRR RAILCAR REQUIREMENT		
Type of Railcars	**WFA/Basin[1]**	**BNSF[2]**
Aluminum Gondola	271	524
Aluminum Hopper	0	2
Steel Gondola	88	132
Steel Hopper	89	209
Total	**448**	**867**

[1] WFA/Basin Opening electronic workpaper "LRR Operating Statistics.xls," worksheet "Peak to Base Summary."

[2] BNSF Reply electronic workpaper "LRR Annual Statistics (BNSF Reply).xls," worksheet "Summary."

2. Cycle Times and Capacity

WFA/Basin used cycle time calculations (consisting of transit times and time spent to perform specific activities) to establish LRR's equipment requirements. In Sections III.B.2.a.(2)(d) and (i) above, BNSF discussed the times for performance of various activities that were developed by WFA/Basins' operating witnesses and then input into the WFA/Basins' RTC Model simulation. BNSF accepted many of these time inputs but determined that the times for certain activities (dwell time for loaded trains at LRS and certain loaded trains at Guernsey Yard) were unrealistically low and increased them accordingly. See Section III.B.2.a.(2)(d) above. WFA/Basins' experts then used the RTC Model simulation to develop a cycle time for each train, consisting of the train's transit time over the LRR route and the time assumed for the train to perform specific activities.

BNSF accepts that basic approach to determining LRR train cycle times. However, BNSF made several modifications to the RTC Model simulation to reflect real-world operating conditions that would be faced by the LRR. Those changes are described in detail in Section III.B. of this Narrative and are not repeated here. BNSF's transit and cycle time assumptions are based on BNSF's revised RTC analysis.

a. Development of Peak-Period Trains

BNSF made certain adjustments to the peak period trains used by WFA/Basin in its RTC Model simulation as discussed in Section III.B.2.a.(2)(h) above.

(1) Operating Inputs to the RTC Model

BNSF discussed the operating inputs to WFA/Basins' RTC Model simulation in Sections III.B.2.a.(2)(d) and (i) above.

b. Results of BNSF's RTC Model Simulation

As discussed in Section III.B.2.a.(2)(k) above, BNSF expert Dave Wheeler performed an RTC Model simulation of the LRR.[29] Mr. Wheeler generated transit times for the LRR from this

[29] One adjustment to the RTC Model was needed to account for loading time at the LRS. Specifically, Mr. Wheeler found that the RTC Model did not recognize that two loaded trains could be at the LRS simultaneously, even though the LRS trackage can accommodate two trains. As a result, if there was a loaded or partially loaded train at the LRS site when a second loaded train arrived, the RTC Model simulation held the second train on the mainline outside of the plant until the first train completed its dwell at the plant. This served to add to the second train's transit times. In order to enable the RTC Model to permit two trains to be present at the LRS, for modeling purposes only Mr. Wheeler constructed a second track at the LRS in the RTC Model. Mr. Wheeler also coded the RTC Model so that the dwell time for the second train would begin to run upon the train's arrival. In the real world, the second train would not enter the LRS site (and begin its dwell) until the first train was partially unloaded. Providing for the second train's dwell to begin upon its arrival is a conservative approach because it eliminates time that the second train might have to spend staging on the mainline until sufficient space at the LRS opened up for it by the partial moveout of the first train through the unload process.

simulation which he provided to BNSF expert Rob Plum.[30] Mr. Plum used these transit times in calculating the LRR's equipment and crew requirements.[31]

3. Other

a. Fueling of Locomotives

BNSF accepts WFA/Basins' plan for fueling locomotives on the LRR. WFA/Basin Opening Nar. at III-C-62 to 67. As discussed in Section III.B.2.a.(2)(d)ii). above, BNSF identified two additional loaded trains that should be fueled at Guernsey Yard.

b. Car Inspections

BNSF accepts WFA/Basins' inspection locations and procedures for the LRR. WFA/Basin Opening Nar. at III-C-67 to 70.

c. Train Control and Communications

BNSF accepts WFA/Basins' determination that the LRR will have a Centralized Traffic Control System. WFA/Basin Opening Nar. at III-C-70. The LRR's communication system and FED's are discussed in Section III.F.6. below.

BNSF accepts the dispatching districts identified by WFA/Basin. WFA/Basin Opening Nar. at III-C-71 to 72.

d. Miscellaneous

---

[30] BNSF Reply electronic workpaper "BNSF REPLY FINAL LRR.xls."

[31] BNSF Reply electronic workpaper "LRR Annual Statistics (BNSF Reply).xls."

Other elements of the LRR's operating plan (locomotive maintenance facilities and procedures, equipment maintenance facilities and procedures, and personnel requirements) and the LRR's maintenance-of-way plan are discussed in Section III.D. below.

D. OPERATING EXPENSES

1. Locomotives

a. Leasing

WFA/Basin assumed that the LRR would lease its locomotives, and BNSF has adopted that approach.[1] WFA/Basin assumed an annual lease cost of { } for each SD70MAC and { } for each SD40-2. In order to lessen the number of differences between the parties, BNSF accepts the WFA/Basin annual lease cost for each type of locomotive, but notes that the lease amount for SD70MACs is conservative. BNSF compared that amount to annual lease costs included in BNSF's and WFA/Basin's variable cost evidence. The { } used by WFA/Basin is $8,482 below the weighted average amount calculated by WFA/Basin for 2004 lease payments in its opening variable cost evidence.[2]

Table III.D.1-1 compares the parties' respective locomotive lease costs:

Table III.D.1-1
Comparison of LRR Locomotive Costs

	WFA/Basin	BNSF	Difference
Number of Locomotives			
1. SD70MAC locomotives	97	113	16
2. SD40-2 locomotives	13	13	0
Annual Locomotive Lease Payment			
3. Annual SD70MAC Unit Lease Cost	{ }	{ }	$0
4. Annual SD40-2 Unit Lease Cost	{ }	{ }	$0
Total Locomotive Lease Cost (*Millions*)	{ }	{ }	{ }

[1] The development of the number of locomotives required by LRR is discussed above in Section III.C.1.c.(2)

[2] See BNSF reply electronic workpaper "III D 1 Loco Lease comparison.xls."

b. Maintenance

Locomotive maintenance expenses consist of two components, a cost based on the annual number of locomotive unit miles ("LUMs") and a cost based on periodic overhauls of each locomotive. As to the per-LUM unit costs, BNSF accepts WFA/Basin's use of a BNSF maintenance contract to identify the per-LUM costs for the SD70MAC and SD40-2 locomotives as calculated in WFA/Basin's electronic workpapers.[3]

With respect to overhauls, WFA/Basin contend that the overhaul cost is included in the maintenance cost per LUM for SD40-2s. BNSF agrees, but has added the cost for required environmental upgrading. The EPA's regulations require that all new locomotives as of January 1, 2005 must meet the Tier II compliance levels for emissions. 40 CFR Parts 85, 89 and 92. In addition, all existing locomotives must be upgraded at their first overhaul after January 1, 2005 to meet the Tier II standards. The historic BNSF maintenance costs that WFA/Basin use for the LRR locomotives do not include the cost of retrofitting locomotives to meet these standards. Based on the amount BNSF pays for the required upgrade, BNSF has included a { } overhaul cost for the SD40-2's.[4]

[3] WFA/Basin's opening narrative at III-D-5 shows a maintenance cost of ${ } and ${ } per LUM for SD70MAC and SD40-2 locomotives respectively. WFA/Basin's electronic workpapers show costs of ${ } and ${ }. BNSF has assumed WFA/Basin's electronic workpapers are correct for purposes of its reply. With respect to escalating the SD40-2 per-LUM maintenance cost, the maintenance contract provides that the 2004 cost is escalated by the lesser of a calculated materials-labor index or 1.7%. WFA/Basin attempt to calculate the materials-labor index in their opening workpaper "LRR Loco Maintenance.XLS". BNSF does not agree with WFA/Basin's calculations. However, since both WFA/Basin's index and the correctly calculated index exceed the maximum escalation rate of 1.7%, BNSF accepts WFA/Basin's escalation of the SD40-2 per LUM maintenance cost for 2004 by 1.7%.

[4] BNSF Reply electronic workpaper "EMD invoice.pdf."

WFA/Basin calculate an annual overhaul cost for SD70MAC locomotives that is below the actual overhaul costs incurred by BNSF. WFA/Basin relied upon a { } BNSF-EMD maintenance agreement as support for an overhaul charge of { }, but this charge understates the material cost for two reasons. First, the material cost in the contract was determined in { }, before the EPA's new emissions regulations came into effect. The cost to retrofit the SD70MAC locomotives in compliance with these regulations is an additional charge that BNSF must pay at a locomotive's first overhaul, and that LRR will incur as well. Second, WFA/Basin fail to take into account a provision of the contract that increases the cost of a locomotive's second overhaul. The cited maintenance agreement provides for a { } increase for the 14-year overhaul, which occurs within the 20-year DCF period and must be paid by the LRR.[5] To correct these errors, BNSF reviewed its invoice data for overhauls incurred during the first six months of 2005 to determine the material portion of the overhaul cost. On average, BNSF paid { } in material costs for each of the { } SD70MACs overhauled and includes this amount in LRR's maintenance expenses.[6]

WFA also ignored the labor costs associated with overhauls, which are a substantial part of total overhaul costs. The maintenance agreement states {

}[8] BNSF

[5] The { } difference between the first and second overhaul is in 1999 dollars. BNSF Reply electronic workpaper "EMD maint contracts.pdf.", produced in discovery at BNSF/LR 75772.

[6] BNSF Reply electronic workpaper "EMD overhauls.xls."

[7] WFA/Basin Opening workpaper 04549.

[8] WFA/Basin Opening workpaper 04561.

determined that the amount it spent on labor for SD70MAC overhauls for the first six months of 2005 was { }.[9] The total SD70MAC overhaul cost is therefore { }.[10]

The total locomotive maintenance costs used in BNSF's DCF analysis are calculated for the reply traffic group sponsored by BNSF. Overhaul costs are based on the number of locomotives the LRR would require for this traffic group. *See* Section III.C.1.c.(3) above. Mileage-based maintenance costs for SD70MAC road locomotives were determined by developing the actual number of LUMs for the BNSF-sponsored traffic group in 2024 and then adjusting that number of LUMs to reflect the annualized traffic volume for the partial base year 2004.[11] For the SD40-2 locomotives, BNSF developed the total number of LUMs by adding together the LUMs for helper, switch and work-train locomotives. The LUMs for locomotives used in switching service were determined by applying the Board's standard 6-mile-per-hour factor to the switch hours; the work-train LUMs were computed by multiplying 125 miles per day times the number of work-train days (assuming 2 locomotives); and the helper LUMs were annualized based on the peak-week requirements.

The following table compares the parties' locomotive maintenance costs:

---

[9] BNSF Reply electronic work paper "EMD overhauls.xls."

[10] The overhaul cost was indexed to 4Q 2004 in BNSF Reply electronic workpaper "III D Operating Expense.xls."

[11] BNSF Reply electronic workpaper "LRR Operating Statistics (BNSF Reply).xls," worksheet "Peak to Base Summary." Similar to WFA/Basin, LUMs were calculated by identifying the number of route miles traveled by each train over the LRR (including loop track), counting the appropriate number of LUMs for each locomotive on each train, and summing the LUMs for all locomotives on all trains.

Table III.D.1-2
Comparison of Locomotive Maintenance Costs

	WFA/Basin	BNSF	Difference
SD70MACs			
1. Actual Locomotive Unit-Miles	6.50 million	6.46 million	(0.04) million
2. Maintenance LUMs*	10.48 million	12.20 million	1.72 million
3. Cost/LUM	{ }	{ }	$0
4. Annual Maintenance	{ }	{ }	$0.96 million
5. Annual Overhaul Charge/Unit	{ }	{ }	$18,301
6. Total Number of Units	97	113	16
7. Total Overhauls	{ }	{ }	$2.52 million
SD40-2s			
8. Actual Locomotive Unit-Miles	0.41 million	0.38 million	(0.03) million
9. Maintenance LUMs*	1.15 million	1.15 million	0
10. Cost/LUM	{ }	{ }	$
11. Annual Maintenance	{ }	{ }	$0 million
12. Annual Overhaul Charge/Unit	{ }	{ }	$2,425
13. Total Number of Units	13	13	
14. Total Overhauls	{ }	{ }	$31,527
13. Total Annual Maintenance	{ }	{ }	*$3.52 million*

* Maintenance LUMs are based on the minimum utilization rates of 9,000 and 7,400 LUMs per month for SD70MAC and SD40-2 units, respectively.

c. Servicing

WFA/Basin derive a locomotive servicing cost per LUM that includes sanding and lubrication from BNSF's 2004 R-1. WFA/Basin calculate the servicing expense for road, helper, switch and work locomotives based on the BNSF train operations servicing cost of { }. BNSF accepts WFA/Basin's train per-LUM servicing cost of { } for road and helper locomotives, but disagrees with WFA/Basin's application of this cost to switch and work locomotives. BNSF separately reports a cost for yard servicing in its R-1, which WFA/Basin ignore. Since work and switch locomotives travel limited distances as compared to road and helper locomotives, it is appropriate to develop a separate LUMs-based servicing cost for these locomotives. BNSF calculates a separate yard servicing cost of { } based on BNSF's 2004 R-1.[12] BNSF applies this yard servicing cost to the helper and yard switching LUMs.

d. Fuel

(1) Fuel Locations

WFA/Basin assume that LRR will fuel virtually all locomotives from permanent fuel racks located at Guernsey Yard. The exceptions are locomotives on local LRS trains, which will be fueled in DTL service at the power plant, and locomotives on trains that are interchanged with the residual BNSF at Donkey Creek, Campbell, Orin Junction and Moba Junction, for which LRR will pay BNSF for fuel on a per-LUM basis while operating over the lines of LRR and the privately-owned mine leads. WFA/Basin Opening Nar. at III-D-6. BNSF accepts LRR's fueling plan, but disagrees with WFA/Basin's assumptions regarding LRR's fuel cost and consumption rate, as discussed below.

(2) Fuel Cost

(a) Guernsey

In calculating the cost of fuel for LRR trains, which is included in the SAC locomotive operating costs, WFA/Basin argue that LRR could obtain all of its fuel requirements at Guernsey Yard via pipeline at BNSF's system-average fuel price as reflected in the R-1. WFA/Basin Opening Nar. at III-D-7. BNSF produced to WFA/Basin in discovery data pertaining to BNSF's actual cost to obtain fuel at Guernsey Yard.[13] Those data show that BNSF's cost for Guernsey fuel is substantially higher than BNSF's system average fuel price. This should not be surprising given Guernsey's location. Although difficult to decipher from the convoluted discussion at

---

[12] BNSF Reply electronic workpaper "III-D-1 Servicing cost.xls," worksheet "Servicing."

[13] BNSF Reply electronic workpaper "III-D-1 MOBA-FUEL(for Index&QRS price).xls," produced in discovery as "MOBA-FUEL.xls."

pages III-D-7-12 of their opening evidence, WFA/Basin's basic argument for ignoring this real-world data is that LRR has a greater demand for fuel at Guernsey than BNSF, which would attract enhanced pipeline capacity and lower prices. These assumptions amount to rank speculation and they have no place in a SAC analysis that requires verifiable evidence to support SAC cost assumptions. They are also illogical and unsupported.

WFA/Basin's argument is based on the premise that LRR would create a new "high-volume start-up demand for diesel fuel" at Guernsey. WFA/Basin Opening Nar. at III-D-9. But this argument is nonsensical given that LRR essentially replaces BNSF's existing operations and fuel demand at Guernsey. WFA/Basin erroneously assert that LRR will start operations with a large diesel fuel requirement at Guernsey – "about 50.4 million gallons per year or an average of more than 138,000 gallons per day" (*Id.* at III-D-8-9) – but these requirements are based on the peak year and are based on erroneous calculations.[14] When these errors in WFA/Basin's calculations are addressed, it is clear that LRR fuel requirements at Guernsey are comparable to BNSF's in the real world.[15]

Presumably, WFA/Basin are attempting to argue that the petroleum industry would respond differently to LRR, which would seek all of its fuel requirements via local pipeline, than to BNSF, which sources its Guernsey fuel requirements {

}. If it were this simple – that the petroleum industry's response to a request for millions of gallons of

[14] The principle problems with WFA/Basin's calculations relate to their treatment of empty train fuel consumption and the incorrect identification of the last fueling location for empty trains on the residual BNSF. WFA/Basin Opening electronic workpaper "LRR Fuel Usage at Guernsey.xls" (located in folder III-C-3).

[15] BNSF Reply electronic workpapers "Modified LRR Fuel Usage at Guernsey.xls" and "III-D-1 LRR Fuel Price.xls."

fuel via local pipeline would be to enhance pipeline capacity *and* lower the cost of fuel – why would BNSF not take advantage of this opportunity? BNSF has an obvious interest in obtaining the lowest possible price for the fuel it uses. It is ridiculous for the armchair experts presented by WFA/Basin to assume that they would be able to achieve what BNSF cannot, regardless of BNSF's huge incentive to reduce fuel costs.

In fact, the supposed opportunity to reduce fuel prices posited by WFA/Basin does not exist. Mr. Rocky Elgie, BNSF's Director Fuel Management, testifies that there is no reason to believe that Wyoming or Montana refiners would supply diesel fuel at prices below the market rate. Refiners in the region are producing the maximum amount of diesel fuel they can and sell all of that fuel at prices that are significantly higher than BNSF's system-average price. Mr. Elgie collected publicly available data showing that the average price of fuel in the fourth quarter 2004 in the relevant markets identified by WFA/Basin was $1.5810 per gallon, including taxes and pipeline transportation,[16] which is approximately 39% greater than BNSF's system-wide average of $1.141 per gallon.

---

[16] Taxes include the federal excise tax at $0.0440 per gallon and Wyoming license tax at $0.0100 per gallon. The pipeline transportation cost from Billings to Guernsey is $0.0446 per gallon and would be even greater for more distant locations. BNSF Reply electronic workpaper "Moba Rate Case-Guernsey fuel source.xls," produced in discovery under the same name.

Table III.D.1-3
Fourth Quarter 2004 Wholesale Fuel Prices ($ per gallon)

Location	Oct 04	Nov 04	Dec 04	Q04 Average
Billings LS Rack	1.6064	1.4871	1.2571	1.4502
Casper LS Rack	1.5984	1.4969	1.2477	1.4477
Cheyenne LS Rack	1.6155	1.5098	1.3053	1.4769
Denver LS Rack	1.5751	1.5091	1.2840	1.4561
Glendive LS Rack	1.6056	1.4896	1.2892	1.4615
Great Falls LS Rack	1.6397	1.5113	1.2806	1.4772
Pasco LS Rack	1.7312	1.5306	1.2589	1.5069
Salt Lake City LS Rack	1.7460	1.6242	1.3140	1.5614
Spokane LS Rack	1.7307	1.5637	1.2169	1.5038
Average All Locations				**1.4824**
Average Including Taxes & Pipeline Transportation				**1.5810**

Source: BNSF Reply electronic workpapers "OPIS 10-2004.pdf," "OPIS 11-2004.pdf" and "OPIS 12-2004.pdf."

Given the high demand for diesel fuel in this region and high prices associated with that demand, it has been BNSF's experience that it is more economical to purchase some of its diesel fuel requirements in other markets and use BNSF's rail infrastructure to transport that fuel to locations like Guernsey. In fact, BNSF's costs for its fourth quarter fuel requirements at Guernsey, including taxes and transportation, are significantly lower than the delivered cost identified above, averaging { } for the fourth quarter 2004.[17]

Table III.D.1-4
Fourth Quarter 2004 BNSF Guernsey Fuel Costs ($ per gallon)

Location	Oct 04	Nov 04	Dec 04	Q04 Average[18]
Guernsey Including Taxes & Pipeline/Tank Car Transp.	{ }	{ }	{ }	{ }

Source: BNSF Reply electronic workpaper "III-D-1 LRR Fuel Price.xls"

[17] This information was produced in discovery and is maintained by BNSF's Fuel Management Group in the ordinary course of business in a database that tracks the cost and volume of fuel dispensed by location. The database draws from system accounting databases that record payments to third-party vendors and transportation suppliers such as pipelines. It also includes a cost component for BNSF to transport fuel in tank cars on BNSF trains from particular refineries or pipeline terminals to fueling locations on BNSF's system.

[18] BNSF's fourth quarter 2004 average cost is a weighted average based on gallons.

Moreover, assuming that BNSF or LRR were somehow able to secure fuel at a lower cost from a refinery capable of shipping on the pipeline system that ultimately feeds Guernsey, neither entity would be able to secure enough pipeline capacity on the Kaneb West pipeline to supply all of its Guernsey fuel requirements.[19] The Kaneb West pipeline is often at capacity. BNSF currently ships approximately { } gallons of diesel fuel per month ({ } gallons per year) via the Kaneb West pipeline. As recently as April of 2005, BNSF's request for additional volume above its current { } gallons per month was declined because the pipeline is full. BNSF does not own the pipeline system and cannot lay claim to millions of gallons of additional pipeline capacity to supply its Guernsey fuel requirements. LRR, as a replacement for the incumbent BNSF, should be subject to the same market realities.

Since there is no basis to assume that LRR could source all of its Guernsey fuel requirements via pipeline at the price assumed by WFA/Basin, BNSF has assumed that LRR

---

[19] Only the Kaneb West pipeline is capable of serving the Dwyer, WY storage facility which ultimately feeds Guernsey via the Key pipeline. Footnote 6 on page III-D-8 of WFA/Basin's opening evidence implies that pipelines from Laurel or Billings feed directly into the Dwyer, WY storage tank which feeds Guernsey. This is untrue. BNSF Reply electronic workpaper "Pipeline Map.ppt." WFA/Basin also ignore the fact that only four of the refineries they identify are capable of putting product into the pipeline system that ultimately feeds Guernsey: CHS in Laurel (via the Seminoe pipeline to Casper to the Kaneb West pipeline); ExxonMobil and ConocoPhillips in Billings (same); and Little America in Evansville (Casper to the Kaneb West pipeline). *Id.* WFA/Basin also misleadingly focus on the refineries' total distillation capacity instead of actual diesel fuel production. Mr. Elgie spoke with representatives of these refineries who confirm that only a portion of the total crude oil they refine becomes diesel fuel: CHS produces only 30% diesel; ExxonMobil, 25%; ConocoPhillips, 37%; and Sinclair/Little America did not identify the exact quantity of diesel produced but confirmed that it is less than 40%.

would obtain its fuel requirements from the same sources as BNSF and at the same costs.[20] These costs are incorporated in the LRR operating expenses.

(b) LRR Fueling By DTL

WFA/Basin assumed that LRR would fuel LRS trains at Moba Junction via direct-to-locomotive ("DTL") fueling at BNSF's system average fuel cost. Although BNSF produced data in discovery identifying the actual cost of DTL fueling at Moba Junction, WFA/Basin ignore that data in developing LRR fuel costs.[21] Since WFA/Basin provide no basis for its assumption that LRR will be able to fuel LRS trains at a cost that is lower than BNSF's DTL cost, BNSF assumes that LRR will pay BNSF's actual DTL cost at this location.[22]

(c) Fueling By The Residual BNSF

WFA/Basin assumed that LRR would pay BNSF's system-wide average fuel cost for trains that are fueled by the residual BNSF and travel on LRR. If WFA/Basin wish to rely on

---

[20] BNSF Reply electronic workpaper "III-D-1 LRR Fuel Price.xls" presents data from the Fuel Management Group database showing BNSF's cost of fuel at Guernsey as well as other locations discussed in more detail below.

[21] BNSF Reply electronic workpaper "III-D-1 MOBA-FUEL(for Index&QRS price).xls" produced in discovery as "MOBA-FUEL.xls." BNSF's Fuel Management Group maintains data on the average amounts paid to DTL providers per year. These data are derived from BNSF's system-wide accounting data and are based on the actual payments to DTL vendors. Mr. Elgie explains that BNSF today uses DTL service at a variety of locations. Most of the fuel used in DTL service is purchased by BNSF and then provided to the DTL supplier to dispense. BNSF's cost of fuel in those instances consists of the cost to obtain the fuel plus an out-of-pocket payment to the DTL provider, which is usually a per-day, per-truck fee or occasionally a contracted price per gallon. At some locations BNSF purchases both the fuel and the DTL service from the DTL provider.

[22] BNSF Reply electronic workpaper "III-D-1 MOBA-FUEL (for Index&QRS price).xls." LRR helper locomotives will also be fueled by DTL service near Gillette, WY. BNSF has assumed the LRR would pay the Gillette DTL price for fuel for these locomotives. BNSF Reply electronic workpaper "III-D-1 LRR Fuel Price.xls"

BNSF to fuel locomotives on LRR trains, then WFA/Basin should be required to compensate BNSF for its actual fuel costs, not its system-wide average fuel cost.

LRR trains interchanged at Donkey Creek, Campbell, Orin Junction and Moba Junction will be fueled by the residual BNSF. Trains interchanged at Donkey Creek are fueled by BNSF at Alliance, NE, therefore LRR would pay BNSF's fuel price at Alliance for the fuel consumed on these trains.

Trains interchanged at Campbell were split into three categories. First, PPL Montana trains to Billings, MT, and Portland Gas and Electric trains to Castle, OR, are fueled in Laurel, MT, and BNSF uses its fuel price for the trains fueled at this location. Second, trains traveling north through Moran Junction are fueled in Glendive, MT, and BNSF uses its fuel price for the trains fueled at this location. Third, Otter Tail Power trains will be fueled at Aberdeen, SD, and BNSF uses its fuel price for the trains fueled at this location.

Trains interchanged at Orin Junction for the Dave Johnston power plant are fueled at Glenrock, WY, using the outside contractor QRS to provide DTL service at this location. Trains interchanged at Moba Junction for the Platte River power plant are fueled at Cheyenne, WY, also using QRS to provide DTL service. BNSF assumes LRR will pay BNSF's average DTL fuel cost for each of these locations.[23]

(3) Fuel Consumption

WFA/Basin assumed that LRR trains would consume fuel at a rate that reflects "BNSF's system average fuel consumption rates per gross ton-mile and diesel unit-mile from its 2004 STB URCS." WFA/Basin Opening Nar. at III-D-12. WFA/Basin provides no support for this assumption. LRR trains are large, heavy unit coal trains, which move over difficult terrain. In

[23] BNSF Reply electronic workpapers "III-D-1 LRR Fuel Price.xls" and "III-D-1 MOBA-FUEL(for Index&QRS price).xls."

the loaded direction, these trains are among the longest and heaviest trains that BNSF handles on its rail network. In the empty direction, the LRR trains trail over one hundred empty, open-top cars that generate substantial wind resistance. There is no reason to believe that a railroad handling unit coal trains in the PRB would consume fuel at the average fuel consumption rate for the incumbent's entire fleet of trains. In fact, the STB has accepted evidence in past SAC litigation that unit coal trains operating over the LRR route in the PRB consume fuel at a rate that significantly exceeds BNSF's system average fuel consumption rate.

In *TMPA*, BNSF presented evidence of above-average fuel consumption on TMPA trains based on a fuel consumption study that analyzed event recorder data obtained from a number of TMPA trains. As BNSF explained in that case, locomotives used to power unit coal trains are equipped with event recorders that keep track of a variety of operating characteristics, including a locomotive's throttle position by time. The amount of fuel consumed by modern diesel locomotives is a function of the locomotive's throttle positions. The manufacturers of the locomotives used by BNSF perform extensive tests to develop highly precise fuel consumption figures for each throttle position on each locomotive model. It is therefore possible to calculate fuel consumption with a high degree of accuracy using the manufacturer fuel consumption specifications and data from event recorders on the amount of time a locomotive spends in various throttle positions.

BNSF also carried out a field test for purposes of its fuel consumption study in the *TMPA* case to determine whether the event recorders could reliably be used to estimate fuel consumption on unit coal trains and whether the fuel consumption rates provided by the manufacturers were reliable. The field test used a BNSF test car equipped with flow meters that measured the amount of fuel actually injected into two locomotives moving over the LRR route.

The locomotives pulled empty coal cars from Guernsey, WY to a mine in the PRB for loading and then returned to Guernsey with loaded cars. Data generated by the test car were then compared to calculations of fuel consumption made using the event recorder data downloaded from those same two locomotives and the locomotive manufacturer's fuel consumption rates. The event recorder calculations for the combined fuel consumption of the two locomotives monitored were within one percent of the test car measurements, thus confirming both the reliability of the event recorder approach to estimating fuel consumption and the locomotive manufacturer tables of fuel consumption.[24]

The Board in *TMPA* accepted BNSF's fuel consumption calculations for purposes of the variable cost analysis with minor adjustments to the fuel consumption rates.[25] BNSF also used its fuel consumption calculations to prepare SAC evidence on fuel consumed by SARR trains, and the Board accepted those calculations as well.[26] In the *Xcel* case, BNSF carried out an identical fuel study based on event recorder data, which also showed significantly above-average fuel consumption on Xcel's trains. The Board accepted BNSF's fuel study for purposes of both the variable cost and SAC test in the *Xcel* case.[27]

BNSF conducted event recorder fuel studies in both *TMPA* and *Xcel* after the Board issued a decision requiring BNSF to perform a special fuel consumption study for TMPA

---

[24] BNSF Reply electronic workpaper "Test Car Validation.pdf."

[25] *TMPA* at 58.

[26] *Id.* at 82.

[27] *Xcel* at 60, 137-138. The *Xcel* trains generally traveled a different route than the lines replicated by LRR (from the Xcel plant through Alliance, NE, to the PRB, and back again) but also confirm that PRB coal trains tend to consume fuel at greater than system-average rates.

trains.[28] At that time, BNSF did not generate train-specific fuel consumption data in the ordinary course of business. However, BNSF recently began collecting event recorder data for certain locomotives as part of a program that measures the performance of its engineers. As explained in BNSF's opening evidence, these data are wirelessly transmitted from trains that pass through designated data collection stations and analyzed in Fort Worth using the Fuel Burn Model that BNSF developed in the ordinary course of business to determine fuel consumption by train and by locomotive for each movement segment.[29] BNSF determined fuel consumption for the LRR trains using relevant event recorder data analyzed by the Fuel Burn Model for the period March 1, 2004 to December 31, 2004.[30] BNSF used these data to estimate fuel consumption by applying the same basic methodologies that BNSF used in the fuel studies that were accepted by the Board in the *TMPA* and *Xcel* cases.[31]

The Fuel Burn Model contains records for thousands of trains, some of which may not be representative of LRR operations and therefore would not provide an accurate measure of fuel consumption. Based on three criteria, BNSF's expert Mr. Bues processed the records to select coal trains that are representative of LRR operations (approximately 1,500 trains) and to eliminate those that are not. First, BNSF selected trains using only three locomotives to match LRR specifications. Second, BNSF selected locomotive consists with one or more SD70MAC

---

[28] *TMPA v. BNSF*, STB Docket No. 42056 (served Feb. 9, 2001).

[29] BNSF Opening Nar. at II-12-14. BNSF relied on these data to determine issue traffic fuel consumption for variable cost purposes, and described the collection and analysis of these data in more detail in its opening evidence. That description is not repeated here.

[30] BNSF Opening electronic workpaper "MOBA Event Recorder Fuel Burn Data.xls." WFA/Basin argued in its opening evidence that these data are unreliable. WFA/Basin Op. Nar. at III-D-12-14. BNSF explained in Section II.A.1 of this reply narrative that WFA/Basin's arguments are misplaced and based on erroneous interpretation of BNSF's data.

[31] *TMPA* at 58; *Xcel* at 60, 138.

locomotives and the remaining locomotives of type AC4400.[32] Third, BNSF selected trains with an origin or destination of a Wyoming PRB mine and traveling to or from Guernsey, Donkey Creek and Campbell.

Mr. Bues then calculated fuel consumption rates for LRR locomotives using the selected data set of more than 1,500 trains. Round-trip fuel consumption rates were developed for trains traveling between the northern PRB mines, the central PRB mines and the southern PRB mines and Guernsey and Donkey Creek.[33] BNSF's workpapers show how these fuel consumption rates were derived and how the results were applied to LRR trains.[34]

Table III.D.1-5
Comparison of LRR Fuel Consumption Rates (gallons per LUM)

Origin Mines to Guernsey	BNSF	WFA/Basin	% Difference
Northern PRB	{ }	{ }	{ }
Central PRB	{ }	{ }	{ }
Southern PRB	{ }	{ }	{ }

In Section II.A.1 above, BNSF presented the results of a comparison between BNSF's Fuel Burn Model data for LRS trains and QRS fuel meter data showing the actual quantity of fuel dispensed at Moba Junction and consumed on LRS trains. This comparison confirms that

[32] Although WFA/Basin intend to equip LRR with SD70MAC locomotives, BNSF's SD70MACs generally do not have the ability to wirelessly transmit event recorder data. Most AC4400 locomotives have the ability to transmit such data and therefore must be part of a train consist for the data to be included in the Fuel Burn Model. The use of these data provide accurate fuel consumption rates for LRR trains. Data recorded for the AC4400 locomotives capture the throttle position of an SD70MAC in the same consist. In addition, as a railroad carrying predominantly cross-over traffic and relying on run-through agreements with the residual BNSF, LRR trains will certainly use BNSF locomotives, which include AC4400s.

[33] BNSF's detailed fuel consumption data contained insufficient reportings for trains traveling via Campbell. Since Campbell and Donkey Creek are in close proximity to one another, BNSF applied the fuel consumption rates it developed for trains traveling via Donkey Creek to LRR's Campbell movements.

[34] BNSF Reply electronic workpaper "III-D-1 Total LRR Fuel.xls."

the fuel consumption rate developed from BNSF's Fuel Burn Model data closely correlates to the rate developed from actual fuel data.

e. Other

This section intentionally left blank.

2. Railcars

a. Leasing

BNSF accepts WFA/Basin's railcar lease costs, but applies those unit costs to the fleet of coal cars developed in Section III.C.1.c.(4).

b. Maintenance

WFA/Basin does not include a separate maintenance cost for railcars, instead assuming that its full service lease covers all of these expenses. WFA/Basin have failed to take account of car repairs that are the user's responsibility or are not reimbursed by the lessor. In fact, the hopper lease contract used by WFA/Basin specifies that the lessee is generally responsible for {

}[35] To calculate the portion of car repairs that are the user's responsibility, BNSF relies on an ICC decision indicating that such repairs comprise 9.51% of total repair costs.[36] BNSF applied the 9.51% to the 2004 URCS car repair cost to determine a user car repair cost per mile of 0.0035,[37] then applied this cost per mile to the LRR

[35] WFA/Basin Opening workpaper 04684.

[36] Car Service Compensation – Basic Perdiem Charges – Formula Revision In Accordance With the Railroad Revitalization and Regulatory Reform Act of 1976, 358 I.C.C. 716, 804 (1977).

[37] BNSF Reply electronic workpaper "BNSF MOBA REPLY PRG.123" at tab "P" in cell G25.

car miles to determine the car-repair cost that would be incurred by the LRR.[38] Most recently, the STB accepted this methodology for determining car repair costs that were the user's responsibility in the *Xcel* decision.[39]

c. Foreign Cars And Private Car Allowance

BNSF accepts WFA/Basin's treatment of foreign cars and private car allowances.

d. Other

This section intentionally left blank.

3. Personnel

a. Operating

(1) Staffing Requirements

The table below compares the LRR operating personnel proposed by WFA/Basin and the minimum number determined to be required by BNSF.

[38] BNSF Reply electronic workpaper "III-D-1 LRR origin-destination pairs.xls" at tab "OD Pairs."

[39] *Xcel* at 144.

TABLE III.D.3-1
Operating Personnel - 2004

Position	WFA/Basin	BNSF	Difference
Director of Operations Control	1	1	0
Manager of Operations Control	4	4	0
Crew Callers	6	6	0
Dispatchers	9	9	0
Director of Marketing & Customer Service*	1	1	0
Customer Service Managers*	11	11	0
Manager of Train Operations	2	2	0
Assistant Manager of Train Operations[40]	11	11	0
Train & Helper Crew Members	171	208	37
Clerk / Crew Hauler	0	8	8
Manager of Locomotive Operations	2	2	0
Manager of Safety and Training	2	2	0
Manager of Yard Operations	5	5	0
Equipment Inspectors	62	62	0
Total	287	332	45

* WFA/Basin included these positions in its G&A Staff.

(a) Operating Personnel (Except Train Crews)

BNSF's witness Loren Mueller reviewed WFA/Basin's operating personnel designations for non-crew positions and generally agrees that the staffing levels are adequate. However, WFA/Basin did not provide any clerks/crew haulers for LRR. Mr. Mueller added two 24/7 clerk/crew hauler positions (for a total of eight employees) at Guernsey and Donkey Creek. The main duty assigned to this position is transporting train crews within the Guernsey and Donkey Creek yards. The position requires a four-wheel-drive SUV in order to access the railroad right-of-way and the yard tracks. When the utility clerks are not being utilized to transport train crews, they will be available to perform administrative duties such as posting bulletins and general orders, maintaining printers and computers in the crew facility, maintaining the vehicle

---

[40] Although Table III-D-2 of WFA/Basin's Opening Nar. at III-D-19 specifies 10 assistant managers for Donkey Creek, Guernsey and Moba Junction, WFA/Basin's workpapers include costs for 11 employees. WFA/Basin electronic workpaper "LRR Operating Expenses.xls," worksheet "Summary," cell E197.

they are driving, janitorial duties at the crew on/off duty facility, and any other duties as may be required by the supervisors in the Guernsey and Donkey Creek yards.

(b) Train Crews

i) Crew Districts

Mr. Mueller has reviewed and accepts the crew assignments specified by WFA/Basin.

ii) Staffing Requirements

WFA/Basin developed their peak-year crew requirements by counting the number of road-crew personnel that would be required to work the trains that traverse the LRR during the peak year 2024. BNSF generally accepts this method as an appropriate way to determine peak-year road crew requirements, but adjusts WFA/Basin's 171 road-crew personnel to meet the peak-year needs of the LRR traffic group determined by BNSF. WFA/Basin's methodology assumed that each crew person would perform 270 shifts per year. While BNSF accepts this proposition because the Board has used it in prior cases, BNSF continues to believe this assumption is unrealistic. At a minimum, the Board must account for the high work load that would be imposed on these personnel in setting compensation, as discussed below.

After determining the number of crew starts in the peak year, WFA/Basin applied a re-crew percentage to calculate the total peak year road-crew personnel. BNSF disagrees with WFA/Basin's re-crew percentage and correctly calculates the re-crew percentage and total peak year road-crew personnel for the BNSF-sponsored LRR traffic group. To do this, BNSF first counted the number of crew starts that would occur in each crew district during the peak year. BNSF then determined the number of re-crews required by the LRR for crews that would be unable to complete their shift within the 12 hours permitted by federal hours-of-service rules. BNSF's witness Mr. Mueller determined that a re-crew would be required whenever BNSF's RTC model analysis showed that the transit time between the crew's yard departure and mine arrival (and vice versa) exceeded 11 hours. This is the maximum amount of transit time that a crew would have available after allowing for on-duty tasks in the yards prior to departure. WFA/Basin employed a general re-crewing requirement of 2.2%, which they claimed was "based on the results of [WFA/Basin's] RTC modeling process." WFA/Basin Opening Nar. at III-D-18. However, as discussed in Section III.B, WFA/Basin's RTC modeling process fails to reflect actual PRB operations, including track outages and congestion from non-LRR trains, and therefore does not produce reliable results. BNSF therefore rejects WFA/Basin's re-crewing percentage and calculates a location-specific re-crewing percentage for shipments moving via each interchange, summarized in Table III.D.3-2.[41]

TABLE III.D.3-2
Re-Crew Percentage by LRR Interchange

Interchange	Re-Crew Percent
Campbell	4.1%
Donkey Creek	3.9%
Guernsey	2.4%
Moba	15.3%
Orin	11.8%

Source: BNSF Reply electronic workpaper "BNSF REPLY FINAL LRR (07-11-05).xls"

BNSF also updated WFA/Basin's crew calculation for turn crews for Donkey Creek and Campbell trains. WFA/Basin assumed that all crews that depart from Donkey Creek and Campbell to take an empty train to the mine would also return from the mine with a loaded train. WFA/Basin Opening Nar. at III-C-46. To assess the reasonableness of WFA/Basin's assumption, BNSF examined the departure and arrival times for the LRR train movements. First, BNSF grouped the trains by mine group, to allow for the opportunity for crews to be taxied to nearby mines to pick-up a loaded train. Second, BNSF reviewed the busiest two-day period of

[41] BNSF Reply electronic work paper "BNSF REPLY FINAL LRR (07-11-05).xls"

the peak week separately for each mine group and found that 44% of the crews from Donkey Creek or Campbell delivering empty trains to mines could not return with a loaded train from that mine or from a nearby mine.[42] In those instances, the crew that delivered the empty train would handle only one train, and a separate crew would be required to work the loaded trains.

BNSF calculated the LRR road crew personnel using its corrections to the specific re-crew percent for shipments moving via each LRR interchange and the appropriate "turn-crew" frequency. This produced a peak-year road-crew requirement of 201.[43]

To derive base-year crew personnel requirements from the peak-year number, BNSF simply multiplied by the ratio of 2004 net tons divided by 2024 net tons.[44] The LRR would require 187 road crew personnel in 2004 to transport the BNSF-sponsored traffic.

With respect to helper and switch crews, BNSF accepts WFA/Basin's assumption that helpers and switch engines would have one-person crews. BNSF accepts WFA/Basin's proposed requirements for helper crew personnel but does not accept WFA/Basin's proposed requirements for switch crew personnel. BNSF's operating expert Mr. Mueller determined that the LRR would require two switch crews working around the clock on twelve-hour shifts. The LRR requires eleven switch crew persons under the assumption that each person will work 270 shifts a year.[45]

---

[42] BNSF Reply electronic work paper "III D 3 train matching.xls."

[43] BNSF Reply electronic workpaper "LRR Operating Statistics (BNSF Reply).xls," worksheet "Peak to Base Summary."

[44] BNSF Reply electronic workpaper "LRR Operating Statistics (BNSF Reply).xls," worksheet "Peak to Base Summary." The net tonnage figures applied are the same as those used in the DCF analysis. As a result, under BNSF's approach, the LRR would actually pay for the number of road crew personnel that it requires in each year of its operations.

[45] BNSF Reply Nar. at III.C.1.c.(1).2.(c)

WFA/Basin did not provide crews for their work trains. BNSF provides for two crew persons to operate work trains based on the number of annual work train days determined by BNSF's witness Mr. Albin in Section III.D.4.

iii) Mine Loading Costs

WFA/Basin assumed that mine loading would be carried out by contractors at the mines and included $2 million in 2004 for this activity. BNSF accepts this expense.

iv) Taxi & Overnight Expenses

BNSF accepts WFA/Basin's unit cost for overnights and its approach to developing the number of overnights, but updates that number based on its reply traffic group. BNSF, however, disagrees with WFA/Basin's cost for taxis and approach to developing the number of taxis required. BNSF disagrees with several aspects of WFA/Basin's cost calculation. WFA/Basin assume that taxis will provide round-trip service, *i.e.*, take a crew to the hotel from Guernsey and return to Guernsey with a crew from the hotel. But WFA/Basin erroneously use only one-way mileages in their calculation of the average taxi miles. BNSF updates this calculation for round-trip miles. WFA/Basin also fail to apply the { } minimum trip cost specified in BNSF's taxi contract. BNSF's contract specifies a minimum cost of { } for the period July 1, 2004 to June 30, 2005.[46] As BNSF's analysis of its October 2004 taxi expenses for Gillette show that the average cost for taxi runs less than 100 miles is { } per mile,[47] BNSF is willing to accept WFA/Basin's use of $1 per mile. Correcting WFA/Basin's failure to properly include the round-trip miles and reflect the minimum trip cost increases the LRR taxi cost from { } to { } per trip.

---

[46] BNSF Reply electronic workpaper, "Taxi contract.pdf."

[47] BNSF Reply electronic workpaper "III D 3 bnsf gillette taxi.xls."

BNSF disagrees with two components of WFA/Basin's approach to developing the number of taxis required. First, BNSF rejects WFA/Basin's assumption regarding crew operations at the mine. As discussed above in Section III.D.3.a.(1).b, WFA/Basin's assumption that a crew taking an empty train to a mine will always return on a loaded train is unsupportable. BNSF corrects WFA/Basin's calculation of the required number of taxi runs to account for the fact that 44% of the time a crew will be unable to make a "turn" with a loaded train. Second, BNSF corrects WFA/Basin's exclusion of taxi costs for helper crews. WFA/Basin calculated the number of taxis required to transport helper crews at the beginning of their shift and to return helper crews to the yard at the end of their trip, but failed to cost these trips in their operating expenses. BNSF corrects this oversight.

(2) Compensation

WFA/Basin use BNSF 2003 Wage Form A and B data as the source for LRR salary information.

(a) Transportation Department Personnel (Except Train Crews)

Compensation for transportation department employees other than train crews was determined by calculating BNSF 2003 Wage Form A and B average annual salaries and indexing those salaries to fourth quarter 2004 levels. BNSF accepts the Wage Form A and B data as an appropriate source for salaries.

(b) Train Crews

WFA/Basin assert that crew wages, as well as wages for other LRR employees, are "established at the same levels as those presently paid by BNSF for comparable positions." WFA/Basin Opening Nar. at III-D-27. With respect to crew salaries, this statement is simply false.

i) Exclusion Of Compensation Actually Paid To BNSF T&E Personnel

WFA/Basin admit that they have selectively chosen to pay their crew personnel some constructive allowances while declining to pay them others. WFA/Basin Opening Nar. at III-D-27-28. These exclusions appear to be based on the notion that some constructive allowances are irrelevant and that others the LRR could simply elect not to pay because WFA/Basin believe the LRR would be a non-union railroad. In its *Xcel* decision, the Board disagreed with the removal of certain constructive allowances from compensation and concluded that the payments were part of the total compensation, whether they were "labeled as salary" or not.[48] In fact, the Board specifically stated that "the payment is part of the prevailing market wage that the [SARR] would have to pay to attract and retain its train crews."[49] As in previous cases, the complainants here have failed to prove that the LRR would not have to pay the same wages as BNSF in order to attract and retain its train crews.

First, contrary to WFA/Basin's arguments, constructive allowances are merely an accounting mechanism used to categorize the total compensation received by T&E employees. LRR employees, like employees at other railroads, will be concerned with the total compensation they receive, not by the labels attached to particular components of that compensation. WFA/Basin do not and cannot explain why LRR employees would forego compensation they could and would earn at another railroad simply because WFA/Basin believe that such compensation is unnecessary.

Second, many of the constructive allowances excluded by WFA/Basin are for clearly legitimate activities such as personal and annual leave and military service for which engineers

---

[48] *Xcel* at 68.

[49] *Id.*

and conductors would expect to be compensated.[50] There is no reason to believe the LRR could avoid compensating its employees for these activities.

Third, WFA/Basin attempt to compare constructive allowances that would need to be paid by the LRR to those allegedly paid by the Wisconsin Central prior to its acquisition by the Canadian National. WFA/Basin Opening Nar. at III-D-29. But this comparison is irrelevant. WFA/Basin have provided no basis for believing that a valid comparison could be made. In particular, they have made no effort to demonstrate that the work effort expected of Wisconsin Central employees bears any resemblance to the very heavy workload that will be demanded from the LRR's 270-start per year employees. According to BNSF's witness Reilly McCarren, who became President of the Wisconsin Central in mid-1999, and who had previously served as Executive Vice President and Chief Operating Officer, road crews on the Wisconsin Central did not approach 270 starts per year on average during his time with the railroad.

Fourth, WFA/Basin cite to the article, "A Different Way to Run a Railroad: Regional Versus National Carriers" which supposedly reported that "T&E personnel with regional railroads tend to have lower compensation levels by 15 to 20 percent than Class I carriers." WFA/Basin Opening Nar. at III-D-29-30. But, as WFA/Basin design it, the LRR is a Class I carrier and would be expected to compensate its employees as such. Moreover, WFA/Basin exaggerate the article's contents. The article actually quotes a single telephone conversation with an executive at RailAmerica who "estimated" the differential. This "estimate" is not supported by any analysis and, in any event, is not applicable to the LRR, where train personnel will be performing 270 starts per year.

[50] BNSF does not assert that T&E compensation should include payments made to train and engine crew persons from the separate productivity fund.

Finally, WFA/Basin attempt to compare their proposed wages to a wage notice posted by Iowa, Chicago & Eastern Railway ("ICE"). WFA/Basin Opening Nar. at III-D-30. WFA/Basin mistakenly compare an average crew person's 2002 wage posted by the ICE to the fourth quarter 2004 wage of the LRR. A more appropriate comparison would be to index the ICE wages to fourth quarter 2004 and use the highest ICE salary (rather than the midpoint), consistent with the fact that the highest paid ICE trainmen likely average 270 starts per year, like the LRR's trainmen. This comparison shows that WFA/Basin's proposed annual base salary of $59,517 is well below the ICE's base salary of $70,940 for comparable work. In addition, the ICE base salary does not appear to include an end-of-the-year bonus, which many regional carriers pay.

ii) <u>More Work For Less Pay</u>

Even if WFA/Basin had properly included constructive allowances in T&E compensation, its compensation levels would be too low because of the extraordinarily high work level it expects from LRR T&E employees. LRR T&E personnel will be expected to average 270 shifts a year. This is far more shifts than the "average" BNSF T&E employee whose compensation is reflected in Wage Form B performs in a year.[51] Compensation data for { } full-year BNSF employees who served as engineers or conductors on trains included in the LRR traffic group reveal that the average number of crew starts in 2004 for these BNSF engineers and conductors was { }, nearly { } fewer shifts than the 270 starts WFA/Basin say LRR crew personnel will perform.[52] Only { } of the { } employees

[51] The Wage Form B figures on which WFA/Basin rely contain aggregate data for all BNSF engineers and conductors. Dividing aggregate wages by the number of employees necessarily produces an average wage.

[52] BNSF Reply electronic workpaper "III D 3 Wages.xls," worksheet "Eng_Cond Combo." The wage data used for this analysis are contained in the same workpaper at worksheet "SMSSOCAL." To develop these data, BNSF's witnesses Mr. Fisher and Ms. Viola used the 2003 payroll records for train and engine crews from BNSF's full wage data provided to

performed 270 crew starts or more in 2003. This demonstrates that LRR T&E personnel will be required to perform much more work each year than the average BNSF T&E employee on whom WFA/Basin based LRR T&E wages.

Given the small proportion of BNSF employees in the sample who performed 270 crew starts per year, it appears unreasonable for WFA/Basin to assume that its entire work force would be able to average 270 starts per year. Indeed, recent press accounts of service problems on UP have reported that those problems stem in part from trying to force too few T&E employees to perform too much work. A representative of conductors for UP is quoted as stating that "we're overworked to the point of exhaustion, and it's getting to the point where our members are actually looking forward to being disciplined because it's the only way that they can get some rest." BNSF Reply electronic workpaper "UP in a Jam.pdf." Similarly, another union representative is quoted as stating that "Railroads in general are trying to get too much work done with not enough people and our members are suffering because of it." *Id.* Employees of Class I railroads are already balking at their current workload. The evidence submitted by BNSF demonstrates that the existing workload is far below the 270 starts per year the LRR would demand. Clearly, the LRR will need to pay premium wages if it expects to generate that level of work effort.

Despite the unreality of the assumption, WFA/Basin has specified that the LRR's T&E work force will be composed only of employees who are willing to work as hard as the hardest-working {   } percent of BNSF crew personnel. In the remote event that such a work force

---

WFA/Basin in discovery at BNSF/LR/CD 0022, used to create BNSF Reply electronic workpaper "SMSSOCAL.DBF." In BNSF's analysis, an employee was counted as "full-year" if that employee had at least one crew start in each month. Only individual payment records that showed an employee actually worked a train on a shift (because the record contained a positive amount in the straight pay (STAmnt) column) were used.

could be developed, LRR would unquestionably need to pay more than an "average" wage. In the railroad world as elsewhere, employees who work more shifts and more hours in a year are better compensated than those who work fewer shifts and fewer hours. Indeed, the small proportion of BNSF T&E personnel who performed at this level was much more highly compensated than the "average" employee who performed only { } crew starts per year.

In its *Xcel* decision the Board agreed that personnel who performed at a high level would be compensated more than the average: "The Board agrees with BNSF that employees working more hours would command more compensation." *Xcel* at 68. WFA/Basin have failed to prove that the LRR would be exempt from this principle.

iii) <u>BNSF Wages Are The Best Evidence Of Market Wages</u>

Absent compelling evidence to the contrary, there is no basis for WFA/Basin to arbitrarily reduce crew compensation below what is being paid in the marketplace today for work of similar type and quantity. Allowing proponents of stand-alone railroads to ignore fundamental economic principles would violate the stand-alone concept. Simply put, the stand-alone railroad must pay the market rate for its T&E employees. If WFA/Basin expect LRR T&E employees to average 270 crew starts per year, they must expect to pay the higher compensation such employees currently earn in the market.

The best evidence of what the LRR would need to pay its 270-shift-per-year crew personnel is actual data that demonstrate what employees who performed the required amount and type of work earned at BNSF. From data for { } BNSF engineers and conductors who worked on trains included in the LRR traffic group, BNSF calculated separately what an engineer or conductor in the hardest-working group of engineers or conductors would have been worked on trains included in the LRR traffic group, BNSF calculated separately what an engineer or conductor in the hardest-working group of engineers or conductors would have been paid.[53] BNSF then averaged the engineer and conductor salaries, just as WFA/Basin did, to derive an overall average wage for T&E employees of { }.

(c) Summary Comparison

The table below compares the compensation for operating personnel proposed by WFA/Basin and BNSF:

[53] For this calculation, BNSF used the group of engineers with annual starts in the range between { } and { } and conductors with annual starts in the range between { } and { }. Calculation of the engineer and conductor average salaries are contained, respectively, in BNSF Reply electronic workpapers "III D 3 Engineers.xls," worksheet "Summary," and "III D 3 Conductors.xls," worksheet "Summary." When escalated to the 4Q2004 level, an average engineer salary for this group was ${ } and an average conductor salary was ${ }. BNSF Reply electronic workpaper "III D Operating Expense.xls."

TABLE III.D.3-3
Operations Personnel Compensation[54]

Position	WFA/Basin Count	WFA/Basin Annual Salary	WFA/Basin Total Salary	BNSF Count	BNSF Annual Salary	BNSF Total Salary	Total Difference
Director of Operations Control	1	$109,030	$109,030	1	$109,030	$109,030	0
Manager of Operations Control	4	$91,069	$364,274	4	$91,069	$364,274	0
Crew Callers	6	$92,575	$555,449	6	$92,575	$555,449	0
Dispatchers	9	$73,534	$661,804	9	$73,534	$661,804	0
Director of Customer Service*	1	$109,030	$109,030	1	$109,030	$109,030	0
Customer Service Managers*	11	$102,150	$1,123,648	11	$102,150	$1,123,648	0
Manager of Train Operations	2	$91,069	$182,137	2	$91,069	$182,137	0
Assistant Manager of Train Operations	11	$84,428	$928,712	11	$84,428	$928,712	0
Train & Helper Crew Members	171	$59,517	$10,177,434	208	{ }	{ }	{ }
Clerk / Crew Hauler	0	$0	$0	8	$40,850	$324,641	$324,641
Manager of Locomotive Operations	2	$91,069	$182,137	2	$91,069	$182,137	0
Manager of Operating Safety and Training	2	$91,069	$182,137	2	$91,069	$182,137	0
Manager of Yard Operations	5	$91,069	$455,343	5	$91,069	$455,343	0
Equipment Inspectors	62	$53,307	$3,305,023	62	$53,307	$3,305,023	0
Total	287		$18,336,159	332		{ }	{ }

* WFA/Basin included these positions in its G&A Staff.

---

[54] Sources: WFA/Basin information from WFA/Basin Opening Nar. at Tables III-D-3 and III-D-5; BNSF information from BNSF Reply electronic workpaper "III D Operating Expense.xls," at worksheet "Summary."

(3) Materials, Supplies And Equipment

In general, BNSF accepts the individual unit costs for items that make up the overall material and equipment expense costs and basic cost per employee. However, WFA/Basin's travel costs are unacceptably low. BNSF adds a travel expense equal to 5% of non-train operating personnel salaries.[55] BNSF also provides additional automobiles for members of the operating staff.

WFA/Basin include $375,000 of unloading and inspection at Laramie River in Materials, Supplies and Equipment. BNSF updates WFA/Basin's cost of unloading to reflect actual unloading costs for one year, rather than the single quarter used by WFA/Basin.

b. Non-operating

(1) Staffing Requirements

(a) Mechanical

BNSF accepts WFA/Basin's proposed mechanical staffing.

(b) Engineering

Engineering staffing is addressed in Section III.D.4.b below.

(2) Compensation

(a) Mechanical

BNSF accepts the compensation for Mechanical Department personnel proposed by WFA/Basin for the LRR.

(b) Engineering

Compensation for engineering personnel is addressed in Section III.D.4.b below.

[55] BNSF Reply electronic workpaper "III D Operating Expense.xls," worksheet "Summary."

(3) Materials, Supplies And Equipment

(a) Mechanical

Materials, supplies and equipment for non-operating mechanical personnel are included in the consideration of materials, supplies and equipment for operating personnel in Section III.D.3.a.(3) above.

(b) Engineering

Materials, supplies and equipment for engineering functions are addressed in Sections III.D.4.b and c below.

c. General and Administrative Expense

LRR as envisioned by WFA/Basin will be a high-density coal hauling railroad. In its first year of full operations, 2005, as proposed by WFA/Basin, LLR will:

- Handle 1.7 million carloads;[56]
- Earn $327.1 million in revenue;[57] and
- Employ 413 people.[58]

As specified by Complainants, LRR qualifies as a Class I carrier. Its size and revenues as adjusted by BNSF, however, place it closer to a regional carrier. In fact, LRR is very similar in size to Wisconsin Central System ("WCS" – the North American operations of Wisconsin Central Transportation Company ("WCTC")), the nation's largest regional carrier prior to its merger into Canadian National ("CN") in 2001. While BNSF believes that WFA/Basin overstate LRR's revenue, even with BNSF's revisions LRR still earns almost $227.9 million in revenue in 2005 and grows to $316.3 million by 2023.[59]

Despite its size, WFA/Basin propose that LRR will require a general and administrative ("G&A") staff of only 50 employees (including many employees usually designated as operating and non-operating personnel) and a G&A budget of a mere $15

---

[56] *See* BNSF Reply electronic workpaper "RR_Comparisons.xls."

[57] LRR will earn $76.6 million in revenue during the last quarter of operations in 2004. WFA/Basin Opening Nar. at III-H-9.

[58] *See* BNSF Reply electronic workpaper "RR_Comparisons.xls."

[59] See BNSF Reply electronic workpaper "LRR Traffic and Revenues WFABasin Opening BNSF Revised.xls."

million annually, excluding insurance, depreciation and property taxes.[60] This figure is low, and implies that LRR can operate at an unreasonably high level of administrative efficiency. WFA/Basin supply scant justification for such an aggressive assertion. WFA/Basin's foundation for their low cost level rests primarily on two factors: (1) LRR will perform "only one, repetitive kind of operation (the movement of coal in unit trains)"; and (2) LRR will outsource "a number of functions normally performed in-house by a Class I railroad."[61]

WFA/Basin, however, propose to operate a far more complex rail undertaking in the LRR than it would have the Board believe. LRR anticipates handling 1.7 million carloads of coal annually, 18.3% of what BNSF handles on its same lines.[62] Although two-thirds of this traffic has competitive transportation alternatives to service using the LRR (or the incumbent), WFA/Basin make no provision for marketing LRR's services in a competitive environment and assume that LRR's connecting railroads will undertake almost the entire customer billing and marketing functions for the benefit of LRR.

Also, WFA/Basin's claim of expense reductions through outsourcing goes far beyond the benefits realized by railroads actually using these strategies. The railroad industry already makes substantial use of outsourcing non-critical functions, and has increased its use in the past decade. While some Class I railroads are restrained by labor

---

[60] *See* WFA/Basin Opening workpaper "LRR Operating Expenses.xls."

[61] WFA/Basin Opening Nar. at III-D-34. WFA/Basin also mentions the Board's G&A conclusions in *Xcel* as a basis for its low staffing and costs here. *Id.* at III-D-37. The WCC stand-alone railroad hypothesized in *Xcel* handled less traffic than LRR, carrying almost 50% less of the tonnage proposed for LRR.

[62] *See* BNSF Reply electronic workpaper "RR_Comparisons.xls." (1.74/9.495 = 18.3%).

contracts from outsourcing all possible functions, the regional carriers formed since deregulation have suffered from no such constraint. Those carriers outsource many of their G&A functions, but none has achieved the extraordinary levels of efficiency claimed by WFA/Basin. A complainant is permitted to base stand-alone cost assessments on an assumption that the SARR will operate efficiently, but it must demonstrate how it will achieve those efficiencies and prove that they are achievable. WFA/Basin have not done that here.

In prior SAC cases, the Board have accepted the complainant's G&A costs on the basis that the defendant did not adequately address the complainant's outsourcing plan.[63] In this case, however, BNSF addresses WFA/Basin's outsourcing assumptions directly and shows that their proposed G&A staffing and cost levels are clearly inadequate.

For the most part, WFA/Basin fail to offer any independent real-world support for their G&A plans. The only real-world railroad example they mention in defense of LRR's outsourcing of its marketing function is the Monongahela Railway ("MGA").[64] That railroad was jointly owned by Consolidated Rail Corporation, CSX Transportation and the Pittsburgh and Lake Erie Railroad Company. Those three railroads were the only railroads served by MGA. While operating roughly one-half the route miles of the proposed LRR, MGA did not approach the traffic density or operational complexity of the proposed LRR, which operates a portion of BNSF (some of the highest density freight railroad in the world). MGA was a private entity so its revenues are not known, but they would most certainly have been substantially less than those proposed for LRR, either by

---

[63] *See, e.g., Duke v. CSX*, slip op. at 59; *CP&L v. NS*, slip op. at 61.

[64] *Id.* at III-D-45.

complainants or as revised by BNSF. MGA was significantly shorter than LRR and the joint ownership of the line by its connecting railroads puts it in a much different situation than LRR. These are glaring disparities and WFA/Basin offer no data about MGA that would support any comparison of it to the proposed LRR, especially not from a marketing perspective. This example does not provide a credible model for a railroad that generates revenues on the order of magnitude assumed by WFA/Basin.

WFA/Basin also offer testimony regarding the marketing staff of 13 people of the former CNW/WRPI. However, this testimony is not compelling because of those 13, 2.5 were in customer service and 10.5 were in marketing.[65] WFA/Basin propose the reverse staffing levels here. LRR as proposed by WFA/Basin have only 2.5 real marketing staff, not 10.5.[66]

BNSF's witness J. Reilly McCarren offers testimony on LRR's G&A requirements. Mr. McCarren is the Chairman and principal owner of the Arkansas and Missouri Railroad ("A&M"), a Class III railroad operating in its namesake states. Previously, Mr. McCarren was President and CEO of WCS and directed those operations from 1996 to 2001. In 2000, its last full year of operations, WCS enjoyed $380 million in railway operating revenues, operated approximately 2,800 route miles, employed over 2,200 people and handled 562,000 of its own carloads, as well as 150,000 carloads of haulage traffic for CN. From 1998 to 2001, Mr. McCarren served as a board member of WCS' parent WCTC and in that role became familiar with railway operations overseas, where WCTC was an active player on the railway privatization front.

---

[65] WFA/Basin Opening Nar. at III-D-47.

[66] WFA/Basin Opening Nar. at III-D-44.

Mr. McCarren was President and CEO of Gateway Western Railway ("GWWR") a $40 million, 400 mile Class II carrier operating in Missouri and Illinois from 1990 to 1996. During 1991, Mr. McCarren also served as interim President and CEO of the Wheeling and Lake Erie Railway, a 900 mile Class II carrier operating in Ohio and Pennsylvania. Altogether Mr. McCarren has spent 26 years in the railroad industry.

Mr. McCarren has been active in railroad industry affairs since founding GWWR in 1990. He has served as vice-chairman of the Legislative Policy Council of the American Short Line and Regional Railroad Association and currently serves as co-chairman of the Industry Working Group. He is vice-chairman of Operation Lifesaver, Inc., a non-profit group concerned with safety at rail highway crossings and along rail rights of way. He is also a member of the Transportation Research Council, which directs the Transportation Research Forum. Between 1990 and 1996, he served as a Board member of the Kansas City Terminal Railroad. With a wealth of Class I, Class II and Class III railroad experience, Mr. McCarren is well-qualified to testify on the G&A requirements of the proposed LRR.

<u>LRR, As Proposed by WFA/Basin, Qualifies As A Class I Railroad</u>

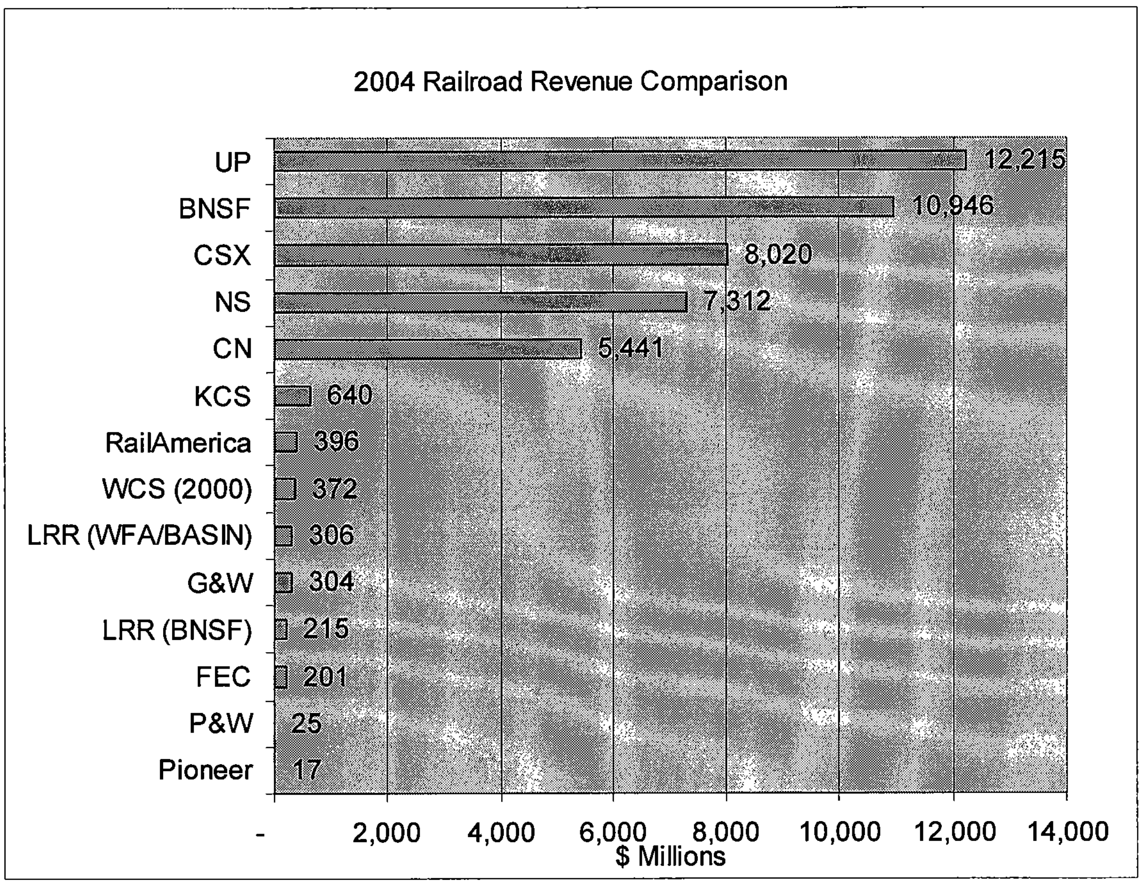
In order to evaluate LRR's operations as compared to real-world railroads, it must first be placed in the proper context. WFA/Basin's hypothetical LRR exceeds the STB threshold for Class I status. The STB classifies railroads by revenue. Pursuant to STB regulations, 49 C.F.R. Part 1201, Section 1-1 of the General Instructions, the 2004 revenue threshold for Class I railroads was $250 million, which WFA/Basin's LRR exceeds at some point over the 20-year DCF period under both parties' evidence.

Because of its short route mileage, in other respects, LRR is more like a smaller regional railroad.

LRR's Peer Railroad Group

Annual gross revenues are the most commonly used basis for standardizing size in the railroad industry. WFA/Basin estimate 2005 revenues of $327.1 million[67] (BNSF has revised that downward to $227.9 million) for LRR, which would place it as the 9th largest U.S. railroad of those operating independently in 2004. Figure III.D.3-1 shows

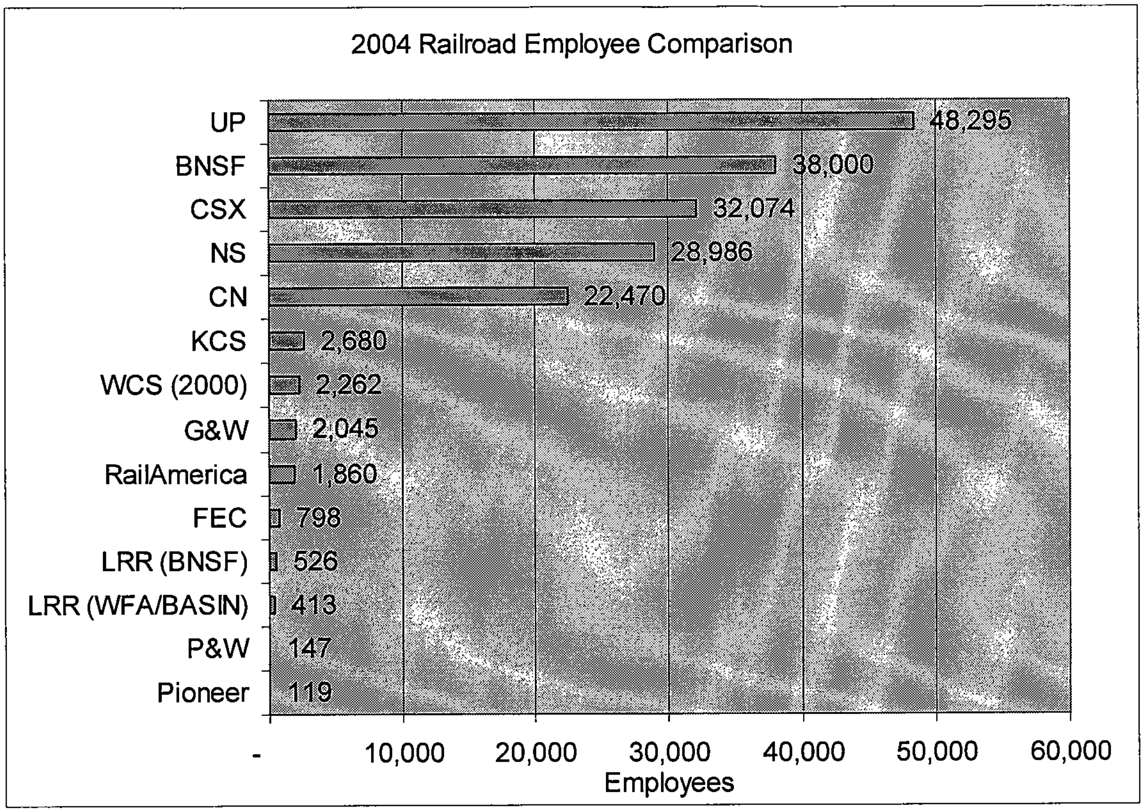
Figure III.D.3-1



LRR revenue in relation to various other carriers.[68]

[67] WFA/Basin Opening Nar. at III-H-9.

Figure III.D.3-2



LRR, while 9th in rank, is well behind the largest carriers in revenue. The best basis of comparison to LRR are two carriers: WCS and FEC.[69]

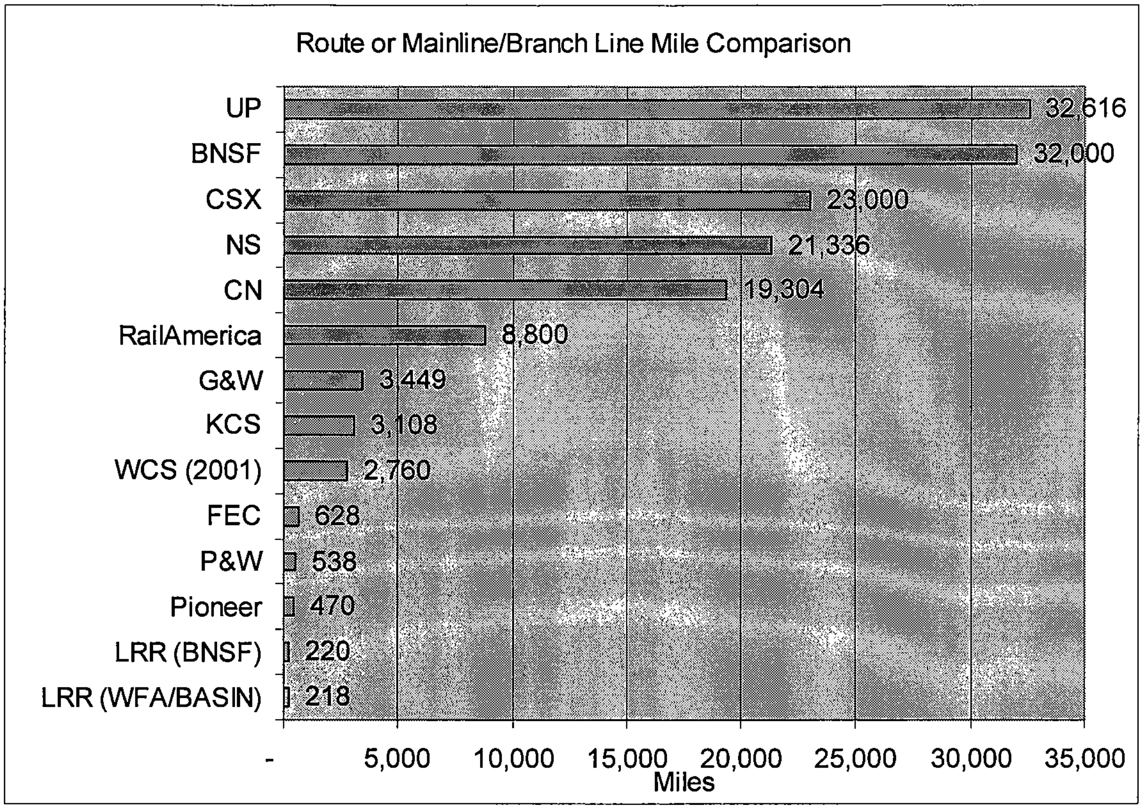
Employment levels are also usually a good indication of the size and scope of a rail operation. Comparison of overall employment levels with other carriers of similar scale can indicate which real-world carriers constitute the best models for the proposed LRR. Comparative railroad employment levels are shown in Figure III.D.3-2.

---

[68] The data in the figures that follow are derived from the companies' most currently available data in their SEC 10-Ks, 14As, R-1s or AAR publications. *See* BNSF Reply electronic workpaper "RR_Comparisons.xls."

[69] RailAmerica does not provide a good comparison because it is a railroad holding conglomerate.

Figure III.D.3-3



With a proposed 413 employees, LRR employee levels fall well below its revenue peer group. Reasonable comparison carriers appear to be the regional FEC and (the much smaller) P&W railroads. WCS, though comparable in revenue, has more employees.[70]

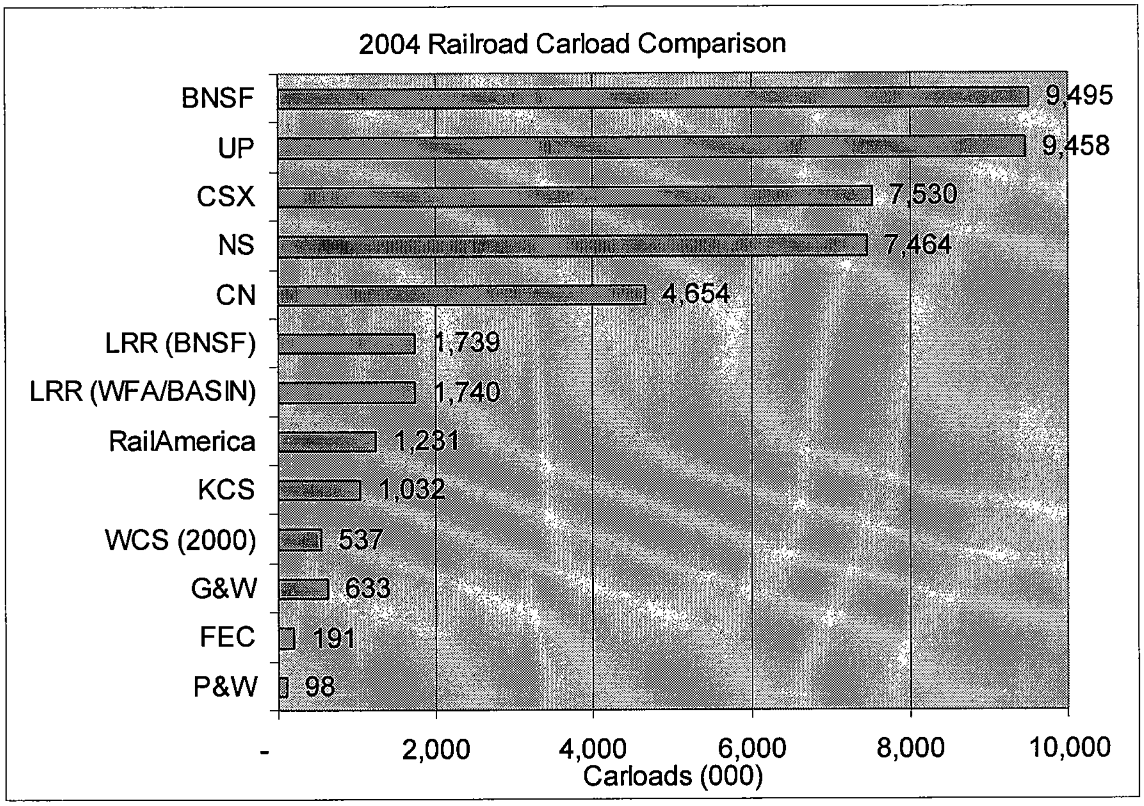
Operating mileage is another measure of comparability. LRR plans to operate 218 miles of railroad, placing it in a lowest class of carriers as shown in Figure III.D.3-3.

Good comparison carriers to LRR, again excluding non-contiguous multi-carrier holding companies, include Pioneer, P&W and FEC. WCS and KCS are next closest in size.

[70] Pioneer is also not comparable because it is a non-contiguous railroad.

Finally, the number of total carloads is another statistic commonly used to compare railroad companies. Figure III.D.3-4 shows how LRR's 2004 projection of 1.7 million carloads compares with other carriers.

Figure III.D.3-4

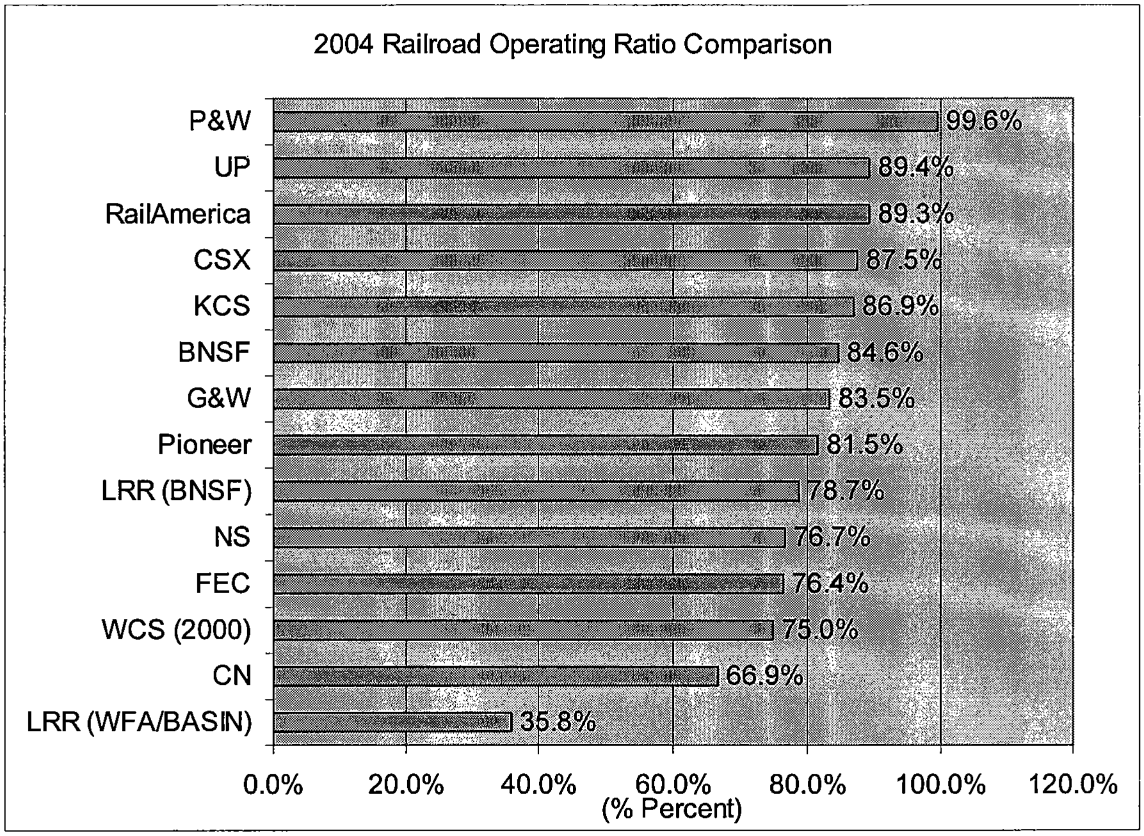


We see that LRR is best measured against KCS and WCS (2000).[71]

Based on these four measures FEC, WCS and KCS are the real-world carriers with the most in common to LRR, excluding U.S. subsidiaries of large Canadian railroads and multi-carrier/ non-contiguous holding companies. Of those, WCS has the most comparable operations in terms of revenues, while FEC most resembles LRR in terms of route structure. All three railroads have or had areas of dense traffic and train operation, but none approaching the level of LRR.

[71] As mentioned above, RailAmerica is excluded because of the nature of its operations.

Figure III.D.3-5



Comparison Of LRR's Performance To Peer Group

Having identified LRR's relevant real world peer group, Mr. McCarren considers how it measures up to that group. He determines that LRR claims a level of efficiency not achieved by any operating railroad of its class. Operating efficiency in the railroad business is judged primarily by operating ratios. The operating ratio represents a carrier's ratio of operating expenses to operating revenues. The railroad industry has long recognized that the lower the operating ratio, the more efficient the carrier. AAR statistics show that the average Class I operating ratio for 2003 was 85.8%.[72] The Class I

---

[72] *Railroad Ten-Year Trends* at 65.

railroad with the lowest operating ratio for the past several years has been CN, posting a 69.8% mark in 2003 (after adjustments) and 66.9% in 2004.

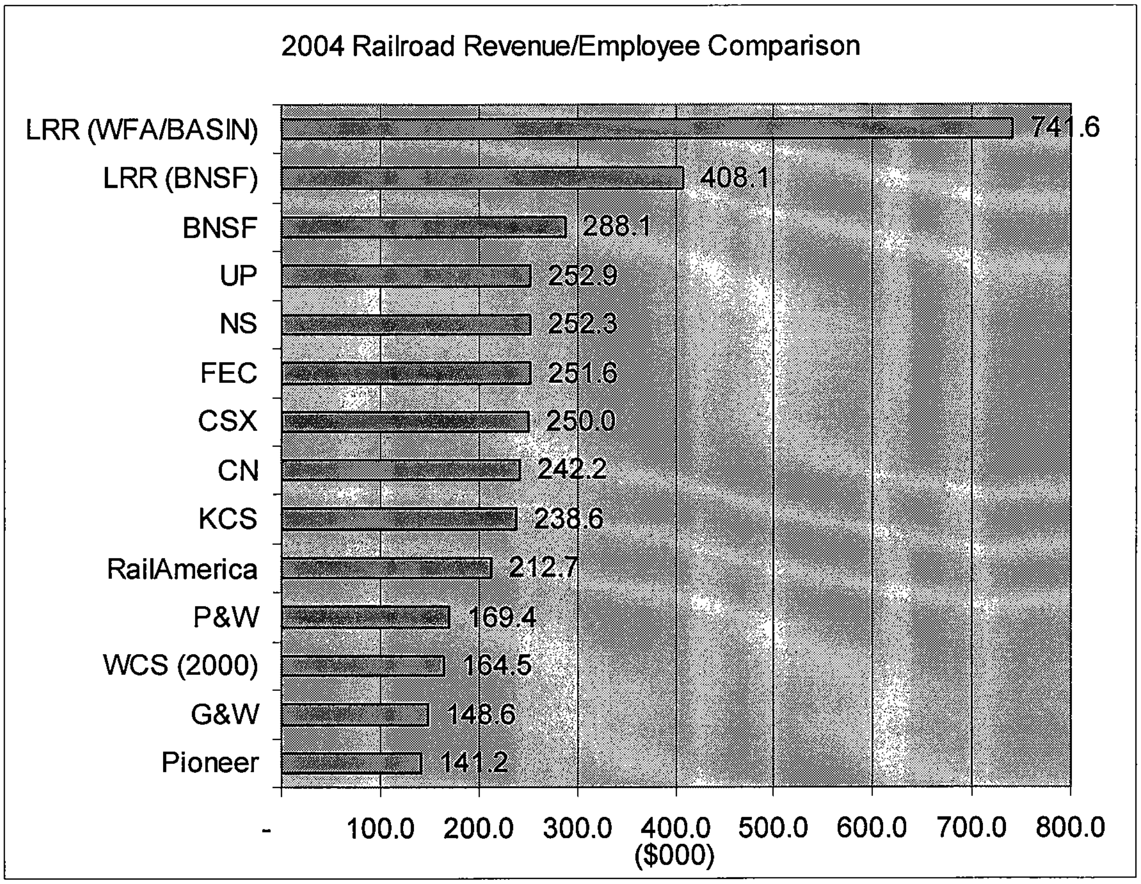
WFA/Basin propose that LRR will operate with an astounding operating ratio of 35.8%, well outside the range of reported operating ratios as shown in Figure III.D.3-5. This is far better than its comparison group: FEC (76.4% in 2004), KCS (86.3% in 2004) and WCS (75% in 2000). Figure III.D.3-5 shows that LRR's proposed operations will yield an operating ratio *just above half the best mark* posted by an independent U.S. Class I railroad in modern times – IC in 1998 at 64%. Even with BNSF's revenue adjustments, LRR will still post an operating ratio of 78.7%, representing a very efficient railroad.

From a historical perspective, the AAR has reported that Class I's as a group enjoyed an operating ratio of 80.28% in their best year over the past decade.[73] The operating ratio for LRR with BNSF's revisions is 78.7% — still quite efficient for a railroad of this size, but markedly more realistic. This underscores both the reasonableness of BNSF's revenue adjustment and the omission of certain costs by LRR. Mr. McCarren acknowledges there may be some short lines that operate in the 50-60% range but none with the traffic or scope of LRR.

Another key measure of efficiency is labor productivity. While measured in many ways, the most common standard is revenue per employee. LRR anticipates earning $741.6 million in revenue per employee. This measure is also "out of sync" with recent railroad experience as shown in Figure III.D.3-6.

[73] *Railroad Ten-Year Trends* at 83.

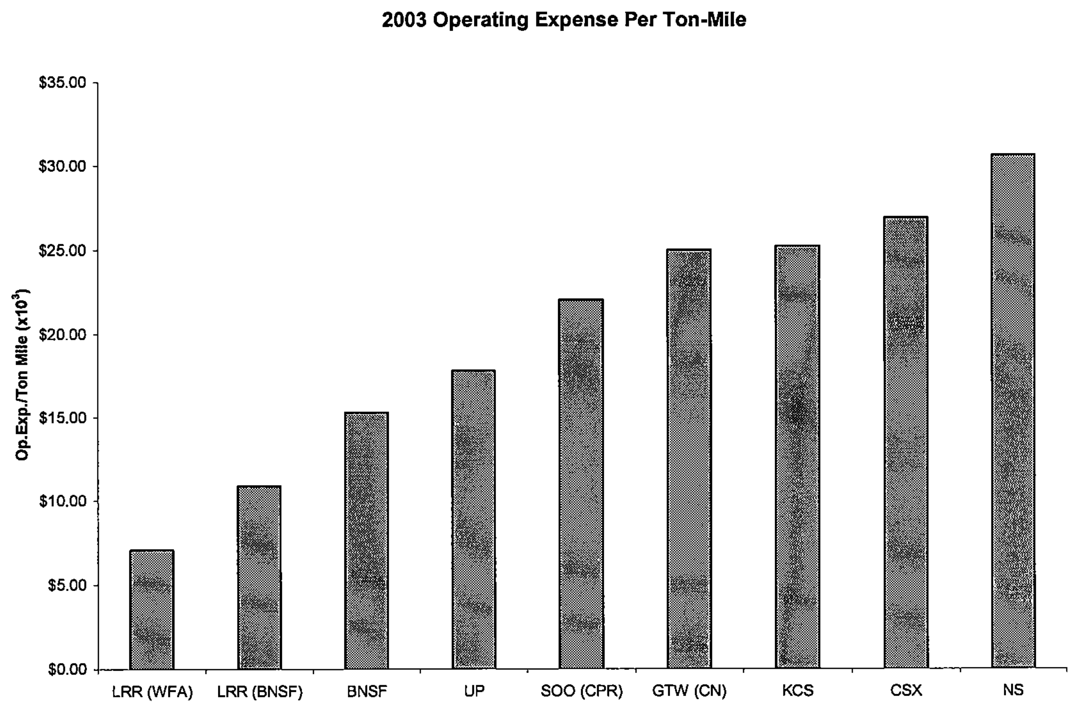
Figure III.D.3-6



Not only does LRR operate completely outside the normal range, it also defies the prevailing trend. As can be seen in Figure III.D.3-6, larger railroads generally outperform smaller ones in this measure, because of returns on scale. When compared to the group of its peer railroads, with revenue per employee less than three hundred thousand dollars per employee, the results predicted for LRR stand out in even greater contrast. Indeed, even as revised by BNSF, LRR produces more revenue per employee, $408.1, than its peer group.

Finally, Mr. McCarren examines LRR based on operating expenses per revenue ton mile compared to the Class I's for 2003. This comparison in Figure III.D.3-7 vividly illustrates how truly unrealistic WFA/Basin's operating expenses are and how defensible BNSF's alternative case is.

Figure III.D.3-7



Source: Association of American Railroads: RR Industry Info - Railroad Profiles, 2003.
The LRR 2004 operating expense was indexed to 2003.

Taken together, these three measures of operating performance strongly indicate that the structure and economics proposed for LRR are outside the normal statistical range for North American railroad operations. This overall result undermines the credibility and reliability of WFA/Basin's G&A projections (indeed all their operating expense projections) for LRR, which fail to comport with the experience of existing players in the industry.

G&A Comparison

WFA/Basin's LRR has 2005 expected revenues very near to those of WCS in 2000. However, WFA/Basin project 2005 operating expenses (less depreciation) of \$113.8 million;[74] this is less than half of the \$244.1 million in operating expenses spent by WCS in 2000. This is from a time when, as BNSF's witness McCarren notes, WCS enjoyed the second-lowest operating ratio of all major, independently-operated North American railroads and was widely regarded as particularly strong with respect to administrative cost containment. Mr. McCarren believes the experience of WCS is a good basis upon which to evaluate WFA/Basin's G&A evidence. WCS is not a perfect analogy for LRR; indeed there is no railroad that matches LRR in all respects. LRR's markets are more limited than WCS, which handled significant quantities of merchandise traffic in addition to unit trains of coal, iron ore, stone and double stack containers. LRR therefore requires less effort in marketing and revenue accounting. On the other hand, its operations are more concentrated, with a critical balance of traffic and capacity, requiring more attention to operations, MOW and engineering. Overall, however, WCS operated with a similar level of operating revenues and should provide a reasonable model for LRR in many respects. Real world comparisons provide a useful benchmark for evaluating the feasibility of stand-alone railroads and the STB should reject the argument that no comparisons can be made between the SARR and documented operating railroads.

WFA/Basin point to no specific railroad to support their unrealistic staffing levels except in marketing. Instead they rely upon the unsupported opinion of their expert

[74] WFA/Basin Opening Exh. III-H-1 at page 24 of 28.

without specifying what in their expert's experience is the basis for their evidence. That approach is comparable to the complainant's G&A evidence in *FMC Wyoming* that the Board refused to accept because it consisted of nothing more than a list of G&A positions.[75] In this case, WFA/Basin merely add a sentence or two description about the responsibilities of each position, but offer no real substantive support for the amount of work to be performed or how the G&A staff they identify can in reality fulfill those responsibilities with employment levels substantially below industry norms.

WFA/Basin proffer an LRR that employs 50 G&A personnel with G&A expenses (excluding depreciation, property/ad valorem taxes and insurance costs) totaling $15 million in 2005.[76] WFA/Basin confuse the issue by including a number of people normally considered operating personnel within G&A. WFA/Basin thus make LRR's G&A staffing appear much more reasonable than it is, but this change does not remedy the critical deficiencies in LRR's staffing.

In order to compare LRR's G&A numbers appropriately to WCS, adjustments must be made to ensure comparability. Eliminating transportation and engineering personnel, LRR's G&A staff count drops to 33. By comparison, Mr. McCarren's former employer, WCS employed 152 people in comparable areas in 2000, its last full year of independent operation, and its G&A expense totaled almost $31 million, excluding depreciation, insurance and property taxes. Thus, WCS employed over four times as many people in "true" G&A areas as LRR, while handling slightly more revenue than proposed by LRR.

---

[75] *FMC*, slip op. at 165.

[76] *See* WFA/Basin Opening Exh. III-H-1 at 24.

Another regional railroad worth comparing is G&W, although it is also considerably smaller in revenues than LRR. In 2001, G&W, with North American revenues of only $140 million, employed a G&A staff of { }. Since 2001, another large regional has been created through the common ownership of the Dakota Minnesota and Eastern and the Iowa, Chicago and Eastern by Cedar American Rail Holdings. The combined 2004 DME/ICE system has revenues of { } million, { } annual carloads, { } employees and { } route miles. That system employs { } people in comparable G&A areas, not including transportation, mechanical and engineering personnel.

The smallest independent Class I railroad today is KCS, which had revenues of $635.7 million in 2004.[77] In 2004, KCS employed { } people in the Finance Department alone, not including marketing and sales { } or information technology { }.

WFA/Basin imply that they will operate far more efficiently than the (presumed) inefficient Class I railroads, through their outsourcing of G&A functions. Yet, as these examples demonstrate, they project a dramatically lower level of G&A staffing than experienced by regional carriers substantially smaller in size and scope of operations than LRR. These carriers also make extensive use of outsourcing where it provides financial benefits just as WFA/Basin propose. For example, WCS outsourced all of its revenue accounting and operations support information technology to UP Technologies.

Using WCS as a basis of comparison, WFA/Basin estimate that LRR can operate with 18 percent of the staff, while handling more than three times the number of carloads

[77] *See* BNSF Reply electronic workpaper "R-1 2004 Data.xls."

and enjoying almost the same revenue.[78] WFA/Basin make no credible argument for the dramatic difference between their projections and the results achieved by those that actually operate railroads.

In order to achieve the vast improvement in operating efficiency that WFA/Basin propose, Mr. McCarren testifies that LRR would have to benefit from unique strategic advantages, new technologies or ways of doing business. However, WFA/Basin propose to utilize standard North American railroad operating methods, with just a few changes at the margins. For example, track construction and maintenance will be done with standard AREMA specification materials and using standard methods used by virtually all railroads. Trains will be manned by industry-standard two person crews. Standard issue locomotives will be used, exactly the same type of locomotives currently purchased by the incumbent BNSF. WFA/Basin propose to utilize a third party information system for railroad operations already used by over two hundred Class II and III North American railroads. Yet the service provided by LRR to its customers is basically the same as that provided by BNSF today. In Mr. McCarren's opinion, nowhere in the WFA/Basin proposal is there a unique idea, plan or proposal that could give rise to a fundamental change in railroad economics. Yet the results contemplated by WFA/Basin could only happen if railroad economics were changed in such a manner.

WFA/Basin provide scant rationale for why they would be able to operate such a complex rail system with half of the G&A expense incurred by one of the industry's most efficient operators. Their filing ignores the anomalous results of the cost calculations, preferring to make vague generalizations about a simplified traffic base, modest route

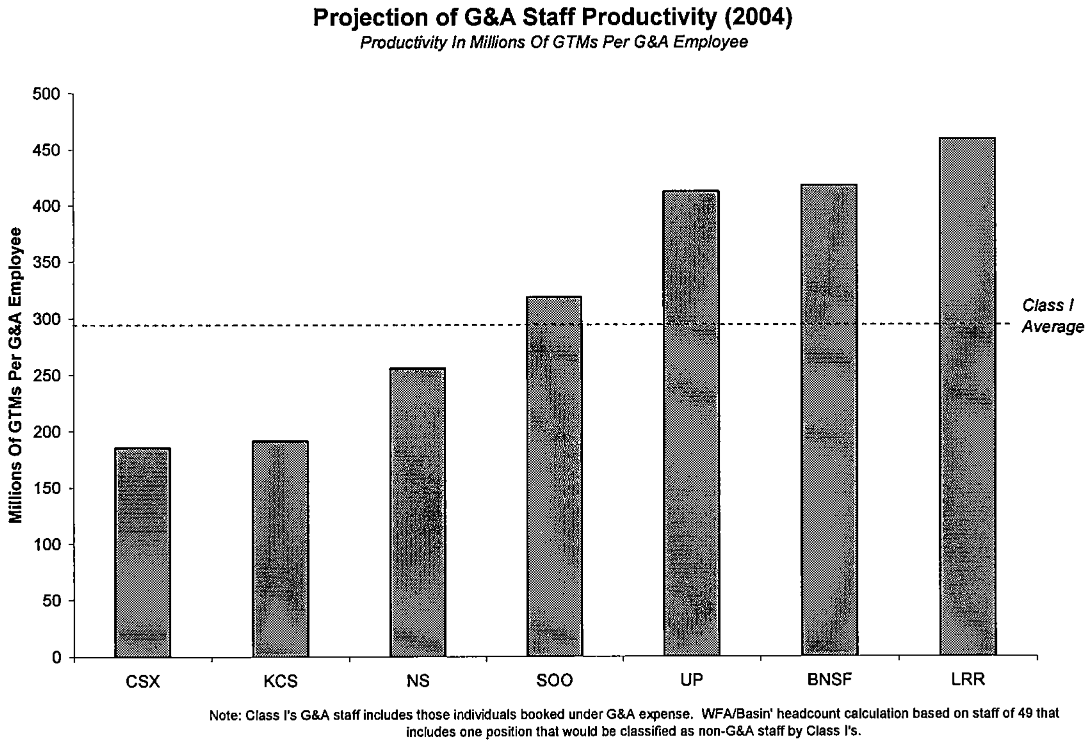
[78] *See* BNSF Reply electronic workpaper "RR_Comparisons.xls."

structure and extensive outsourcing. Nothing, however, is simple, modest or unassuming about a railroad that has revenues on this level and the ultra-high traffic density found in the PRB. And, as shown later, LRR actually budgets less money for outsourced services than the current operators in the real world do. Absent a convincing explanation for results far outside industry experience, WFA/Basin's assumptions are unsupportable.

With the assistance of FTI Consulting, witness McCarren evaluates the productivity of WFA/Basin's proposed G&A staff of 37 (which excludes some employees that Mr. McCarren and the industry do not consider G&A staff) to the G&A staff of other Class I's based on the millions of GTMs handled per employee. As previously shown in chart III.D.6 of revenue per employee and demonstrated in Figure III.D.3-8 below, WFA/Basin's employees were more productive than the Class I average.[79]

[79] *See* BNSF Reply electronic workpaper "G&A Charts.xls," spreadsheet "G&A Productivity."

Figure III.D.3-8



Mr. McCarren concludes that the results stem from erroneous assumptions and the failure to acknowledge important areas of expense. WFA/Basin have the burden to show that all their operating costs are verifiable. *Coal Guidelines*, 1 I.C.C. 2d at 543. They have not done so here.

Since WFA/Basin's assumptions are infeasible, Mr. McCarren does an independent analysis of the LRR's G&A costs. Mr. McCarren examines the individual areas that make up G&A expense and identifies where the proposed LRR operation diverges from normal practice and industry experience.

(1) Staffing Requirements

LRR proposes a staffing level of 50 G&A employees broken down in departments as follows:

Table III.D.3-9[80]

WFA/Basin's G&A Proposal	**Employees**
President's Office	3
Finance and Accounting Department	13
Law and Administration Department (including claims, training, HR and IT)	15
Operations (including marketing)	19
Total	50
Total Traditional G&A (no Operating functions)[81]	33

As Mr. McCarren demonstrated earlier, WCS provides a good basis for comparison to LRR in several respects. WCS employed 152 people in comparable areas, as detailed below:[82]

[80] WFA/Basin Opening Nar. III-D-36.

[81] To narrow the differences, Mr. McCarren includes the Manager of Operating Rules and Safety, the VPs Engineering/Mechanical and Transportation and their assistants within G&A for LRR so that the 37 employees specified as G&A employees by WFA/Basin retain that designation.

[82] *See* BNSF Reply electronic workpaper "WCS & IMRL.xls."

Table III.D.3-10

Category	WFA/Basin's LRR Staffing	WCS 2000 Staffing	Difference
President's Office	3	2[83]	1
Finance and Accounting	11	64[84]	(53)
Information Technology	8	17	(9)
Materials & Purchasing	2[85]	3[86]	(1)
Legal Affairs (including claims, training and secretarial)	5	4	
Human Resources	2	21	(19)
Marketing	2	37	(35)
Real Estate	0	4[87]	(4)
Subtotal G&A	**33**	**152**	**(119)**
Engineering/Mechanical	2	NA	NA
Transportation	15[88]	NA	NA
Total	50	NA	NA

Mr. McCarren concludes that it would be necessary to increase LRR's staffing substantially to operate the proposed rail system in a responsible manner. To determine a credible G&A staff, Mr. McCarren presents a detailed, bottom up review of LRR

[83] WCS was a subsidiary of WCTC; additional executive department personnel were part of the holding company payroll and are excluded here.

[84] Includes Treasury Department personnel organized under WCTC but performing duties principally for WCS.

[85] LRR has an unusual combination of budgeting and purchasing personnel within the Finance Department.

[86] WCS employed 25 people in materials and purchasing; however, all but 3 are considered to be more appropriately assigned to operating departments and are therefore excluded here.

[87] WCS organized real estate functions in its Engineering Department. LRR makes no provision for this function.

[88] LRR combines the marketing function part-time to a position held by the "Director of Marketing and Customer Service."

functions and identifies staff and compensation costs that LRR would experience in order to operate. As Mr. McCarren explains, the administration of LRR can be readily compared to that of a large regional such as WCS, making allowances for differences in network size and operations. He assumes that LRR, although officially a Class I carrier as defined by the STB (as proposed by LRR from year one, and as revised by BNSF from year 2010), could feasibly operate at the levels of a mid-sized regional carrier. In other words, he makes the assumption that LRR can operate more efficiently than most of its Class I peers currently do. This assumption results in a redesigned LRR that is the least cost, most efficient SARR that is possible rather than the infeasible LRR that WFA/Basin posit.

Mr. McCarren makes several staffing and costing recommendations that he states will bring LRR to the minimum G&A staffing levels necessary to make its operations feasible. First, he examines the specific G&A staffing requirements and expenses for each Department of the LRR and compares WFA/Basin's assumptions with the minimum requirements for a railroad of the size and complexity of LRR. Second, Mr. McCarren examines the compensation levels for LRR's executives. Finally, he identifies certain necessary start-up costs for the new railroad, which are addressed below and in Section III.D.3.c.(4).

WFA/Basin essentially propose a G&A staff of 33 (excluding non-GA staff) for the LRR headquartered in Guernsey, Wyoming. The LRR staff will either perform G&A functions themselves or oversee the functions that are contracted out to third parties. The proposed staff and costs are insufficient to accomplish the mission with which it is charged. Mr. McCarren has redesigned the organization to accomplish the tasks required.

That redesigned organization is set forth in Table III.D.3-11 and contrasted with the proposed LRR organization. The individual positions are then described in the narrative that follows.

Table III.D.3-11

General & Administrative Department/Position	WFA/Basin's Employee Count[89]	BNSF's Employee Count	Difference
1. President's Office			
a. President and CEO	1	1	0
b. Administrative Assistant	1	1	0
c. Director Corporate Relations	1	1	0
Subtotal – President's Office	3	3	0
2. Finance and Accounting			
a. Vice President – Finance	1	1	0
b. Administrative Assistant	1	1	0
c. Treasurer	1	1	0
d. Assistant Treasurer	0	1	1
e. Cash Manager	0	1	1
f. Controller	1	1	0
g. Assistant Controller - Revenue	1	1	0
h. Director - Taxes	1	1	0
i. Director – Financial Reporting	0	1	1
j. Manager Financial Reporting	1	1	0
k. Sr. Financial Analyst	0	2	2
l. Revenue Accounting Clerk	0	3	3
m. Assistant Controller – Disbursements	1	1	0
n. Manager – Accounts Payable	0	1	1
o. Manager - Payroll	0	1	1
p. Manager Revenue Analysis	0	1	1
q. Manager Car Equipment Accounting	0	1	1
r. Disbursement Clerks	0	1	1
s. Manager Misc. Billing	0	1	1
t. Director – Internal Audit	0	1	1

[89] WFA/Basin Opening Nar. III-D-36.

General & Administrative Department/Position	WFA/Basin's Employee Count[89]	BNSF's Employee Count	Difference
u. Manager of Administration	0	1	0
v. Director Budgeting and Analysis	0	1	0
w. Manager of Real Estate	0	1	1
x. Director of Purchasing	0	1	1
y. Manager of Purchasing	0	1	1
z. Manager of Budgets & Purchasing	2	0	(2)
aa. Clerk/ Analysts	3	0	(3)
Subtotal – Finance and Accounting	13	28	15
3. Law and Administration Department			
a. VP – Law and Administration	1	1	0
b. Staff Attorney	2	2	0
c. Secretary/Paralegal	0	1	1
d. AVP – HR	0	1	1
e. Director – Safety & Loss Control	0	1	1
f. Manager – Safety	0	1	1
g. Manager – Safety/Claims	1	0	(1)
h. Director – Human Capital (Resources)	1	0	(1)
i. Manager – Recruitment	0	1	1
j. Manager – Personnel	0	1	1
k. Human Resources Coordinator	0	1	1
l. Director- Compensation & Benefits	0	1	1
m. Claims Manager	0	1	1
n. Secretary/ Administrative Assistant – HR	1	1	0
o. Manager of Training	1	1	0
p. AVP- Information Technology	0	1	1
q. Director- Information Technology	1	0	(1)
r. IT Specialists	7	11	4
Subtotal – Law and Administration Department	15	26	11
4. Marketing Department			
a. Vice President - Marketing	0	1	1
b. Secretary/Administrative Assistant	0	1	1
c. Manager – Coal Marketing	0	2	2
d. Market Mgr	2	0	(2)

General & Administrative Department/Position	WFA/Basin's Employee Count[89]	BNSF's Employee Count	Difference
Subtotal – Marketing	2	4[90]	2
5. Transportation Department			
a. VP - Transportation	1	1	0
b. Administrative Assistant	1	1	0
c. Director Customer Service	1	In Operating[91]	(1)
d. Customer Service Managers	11	In Operating	(11)
e. Manager of Operating Rules and Safety	1	1	0
Subtotal – Transportation	15	3	(12)
6. Engineering and Mechanical a. Vice President	1	1	0
b. Administrative Assistant	1	1	0
Subtotal	2	2	0
Total – G&A	50	66	16
Total – G&A, less positions shifted to ops	37	66	29

(a) President's Office

WFA/Basin propose that the LRR President's office contain a President, an administrative assistant and a Director of Corporate Relations. Under their proposal, each LRR Vice President will report to the President. The President will chair a five person board consisting of the President, Vice President-Transportation and three outside Directors. The outside Directors will include a member of LRR's customer group, a

[90] Assumes continuation of outsourcing marketing support work.

[91] LRR's Director of Customer Service & Marketing has been assigned to Customer Service given the number of employees reporting to that person.

representative of their investor group and a single independent Director. The three outside Directors each serve without compensation.

Mr. McCarren agrees with the functions set forth by WFA/Basin for the President and the composition of the President's office. However, Mr. McCarren disagrees with WFA/Basin regarding the appropriate size, composition and compensation of LRR's Board of Directors. As several recent corporate scandals have proven, protecting stakeholders' interests has become increasingly more complex and important. While not a public company, LRR will be of a significant size and require a substantial amount of financing. Its investors will require a board that accurately reflects their interests and stake in the company. Since LRR plans to incur a significant amount of debt, lenders will likewise insist that it employ corporate governance requirements commensurate with an enterprise of its size. Moreover, they will insist that the board have sufficient competence and experience to oversee the activities of management properly. The board proposed by WFA/Basin does not meet these requirements.

Mr. McCarren has reviewed information on publicly-traded Class I, regional and short-line railroads from 2004. The boards of the 15 railroads whose information he reviewed ranged from 5 to 15 Directors (or on average 9 Directors), including from 2 to 4 outside Directors (or on average 8 outside Directors). A summary of those Boards appears below:

Table III.D.3-12

Board of Directors
Railroads

Railroad	Total No.	Outside No.	Compensation
BNSF	10	9	$60,000/yr; add'l $10,000 for Audit Comm Chair, add'l $5000 for any other Comm Chair.
(2005)			$1,000/mtg (Board or Comm)
			Awards and options
			(Only outside directors receive compensation)
CN	15	14 (13 unrelated)	US$90,000 and 7,200 Common or Restricted Share Units for Board Chair,
(2005)			US$10,000 and 2,700 Common or Restricted Share Units for all other directors;
			US$1000/board mtg, US$1000 Travel Attendance fee; US$3,500 for being comm. Member;
			US$1,000/comm. Mtg; US$10,000 for comm. Chair
			The above applies to 13 unrelated directors
			1 Officer rec'd no comp for board membership
CSX	11	10	$75,000/yr to non-employees and 2,500 shares of CSX stock;
(2005)			$10,000/yr to Comm Chair; $1,000/mtg (Board & Comm) to non-employees;
			$15,000/yr to Chair of Audit Committee
			$5,000/yr additionally to Audit Committee Members;
Illinois Central	9	8	$170,000 Chairman
(1996-1998 Data)			$20,000 Other Directors
			$3,000/Comm. Chair
			$2,000/mtg Attendance
			2250 Stock Options
			Retirement Plan
KCS	8	7	$10,000/yr non-employee Director; $4k/Bd mtg in person;
(2005)			$2k/Bd mtg via phone;
			$2k/Comm mtg in person;
			$1k/Comm mtg via phone;
			Addl $1,000/Audit or Executive Comm Chair; Addl $500/mtg. to Comp. or Nom. Comm Chair;
			Awards and options
			(Only outside directors receive compensation)

Norfolk Southern	11	10	$32,000/non-employee Director
(2005)			$9,000/qtr for serving on 2 or more committees for non-employees
			3,000 restricted stock shares for non-employees
			4,000 stock units to non-employees
UP	11	10	$120,000/yr; add'l $15,000 for Comm Chair,
(2005)			Add'l $10,000 for Audit Committee members;
			Awards, options, pension after 5 yrs
			(Only outside directors receive compensation)
Wisconsin Central	9	6	6,000 share stock option
			and either (1) $30,000
(2000)			in phantom stock; or (2)
(Acquired by			$15,000 cash and
CN in 2001)			$15,000 phantom stock.
			Chairman also receives
			$120,000.00
Florida East Coast	10	9	$30,000 Each Director; $5,000 for Comm. Chair
			$2,000/mtg Attendance (Board & Comm.)
(2005)			Directors receive options for $50,000 in restricted stock shares upon election, and 1,412 shares upon reelection;
			(Only outside directors receive compensation)
Emons	7	5	$10,000 each Director;
(2001)			$500/Bd or Comm. mtg in person;
(Acquired by			$250/Bd of Comm. mtg by phone
G&W in 2002)			(Only non-employee directors receive compensation)
Genesee & Wyoming	9	8	$20,000 each Director;
			$2,000/Bd mtg; $1,000/Comm. mtg; $400/
(2005)			Bd or comm. mtg by phone; $10,000/Audit Chair;
			$5000/Governance & Comp. Comm. Chairs
			(Only outside directors receive compensation)
Pioneer Railcorp	5	2	$3,000/Director (in 2001)
(2005)			
Providence & Worcester	9	7	$500/mtg base + $50 /mtg for each
			year as Director
(2005)			$300/Comm. Mtg, $350 for Comm. Chair
			100 shares stock option

			(Only outside directors receive compensation)
RailAmerica	9	7	$36,000/yr; $1,000 per Brd mtg;
(2005)			Add'l $1,250 for Audit Comm. Chair, $625 to Comp. & Nom. Comm.
			$1000 per comm. mtg, $1,500 for Comm. Chair;
			5,000 shares stock option each June.
			(Only outside directors receive compensation)
CNW	7	6	$50,000/non-employee Director
(1994 Data)			
BNSF Sources: Year 2005 Schedule 14-A			
CSX Sources: Year 2005 Schedule 14-A			
IC Sources: Year 1996 Schedule 14-A; Year 1997 Form 10-K; Year 1998 R1			
KCS Sources: Year 2005 Schedule 14-A			
Norfolk Southern Sources: Year 2005 Schedule 14-A			
UP Sources: Year 2005 Schedule 14-A			
WC Sources: Year 2000 Schedule 14-A and Form 10-K			
FECR Sources: Florida East Coast Industries Year 2005 Schedule 14-A			
Emons Source: Fiscal Year 2001 Schedule 14-A			
Genesee Source: Year 2005, Schedule 14-A			
Pioneer Source: Year 2005, Schedule 14-A			
P&W Source: Year 2005, Schedule 14-A			
RailAmerica Source: Year 2005, Schedule 14-A			
CNW Source: Year 1994 Schedule 14-A			

Based on this information and his experience with non-public small railroads and the public WCTC, Mr. McCarren concludes that a company of LRR's size should have a minimum of 7 Directors with at least 5 outside Directors, 4 of whom should be independent of any dealings with the company exclusive of ownership interest. The inside Directors should include the President/CEO and the Vice President of Finance/CFO rather than the Vice President of Transportation as WFA/Basin propose. Given the prominence of outside equity capital and the private nature of the firm, Mr. McCarren believes the board should have a non-executive Chairman drawn from the ranks of outside Directors. At least one of the other outside Directors should have sufficient financial expertise to serve as Chairman of the Audit Committee.

The only railroad in the table above with fewer than 7 Directors is Pioneer Railcorp, a small railroad holding company with approximately $17 million in revenue[92] and a market capitalization of $13 million.[93] All of the other railroads above have at least 5 outside Directors. The railroads comparable to LRR have a minimum of 7 directors. That was not the case when the STB decided *TMPA* and *Xcel* because KCS then had only 5 directors. Times have changed since then and the size of even the smallest railroads reflect those changes.

Mr. McCarren states that while inside board members will serve without compensation beyond their normal salary, outside board members will demand compensation commensurate with their service. That is true for even those outside Directors with some financial stake in the venture. For example, WCTC Directors were always compensated, even in the early days of WCTC as a private company. Similarly, Mr. McCarren compensated those Directors at Gateway Western representing the equity interests backing the railroad. Even the small A&M compensates its Directors, all of whom are significant investors in the company. In Mr. McCarren's experience, compensation is related more to the size of the company (and hence the workload of the Director) than its public/private status or Director independence. The recent focus on Director liability has made it difficult to find qualified Directors to serve, without some compensation. Mr. McCarren believes LRR's Board would be hard pressed to find

---

[92] *See* BNSF Reply electronic workpaper "Pioneer - 2004 10KSB.pdf."

[93] *See* BNSF Reply electronic workpaper "Pioneer - 2005 PRE14A.pdf."

qualified Directors to serve without adequate compensation. As Table III.D.3-12 shows, outside railroad board members regardless of independence received as much as $120,000 in 2004. WFA/Basin offer no support for their conclusion that the LRR's directors would agree to serve without compensation other than their bald assertion and citation to *Xcel*.[94] BNSF offers not just the best, but the only evidence on this score.

For a company of this size, an annual Director's fee of $40,000, including travel and expenses, is reasonable and conservative. KCS reports (in its 2005 Proxy) that its outside Director compensation would equate to a minimum of $30,000 providing Directors attended all six board meetings. Total compensation would depend on committee meetings attended, committee chairmanships held and the value assigned to restricted stock grants made to Directors. All in all, the value of KCS Director compensation package would be expected to exceed $40,000 annually. FEC's director compensation package, as outlined in its 2005 Proxy, would provide a minimum of $38,000 in cash compensation to Directors who attended each meeting. Committee meetings, committee chairmanships and equity grants represent additional income that again produces a total pay package well in excess of $40,000. Since LRR is a private company, with no public market for its securities, all compensation should be in cash. While LLR, as a private company, does not present the level of risk to a Director that a public company such as FEC or KCS provide, it also does not provide an opportunity to profit from increasing share prices associated with restricted stock grants provided by FEC and KCS. As such, the compensation scheme proposed by BNSF is conservative in today's world, especially given the risk that Directors incur even in private companies.

[94] WFA/Basin Opening Nar. at III-D-39.

The non-executive Chairman should receive a higher level of compensation, at least $70,000, including travel and expenses. Additionally, Mr. McCarren notes that based on public information about insurance in the railroad industry, LRR would pay approximately $750,000 for Directors' and Officers' Insurance.

(b) Operations Department

i) Transportation Function

Mr. McCarren agrees that a Vice President-Transportation is appropriate for the Operations Department. He also includes an administrative assistant to assist the Vice President. The remaining Operations employees that WFA/Basin included in G&A, except for the marketing staff, which are discussed below, are not ordinarily recognized as G&A staff and, therefore, are addressed by Mr. Mueller in Section III.D.3.a above.

ii) Marketing Function

WFA/Basin propose a marketing staff of two Marketing Managers and an outsourcing expense of $120,000 purportedly to cover two FTE positions.[95] This staff is intended to handle the sales and marketing needs of a railroad that is proposed to begin operations with $327.1 million in 2005 revenues, grow to over $500 million over 20 years.[96] This staff is absurdly small by railroad industry standards, with an average revenue per marketing employee figure starting at $81.8 million and climbing to $125 million.

[95] WFA/Basin also included a Director Marketing/Customer Service. Given the size of the Customer Service staff, that person's role would have been primarily related to that function and not marketing. *See* WFA/Basin Opening workpapers "LRR GA Outsourcing.xls."

[96] WFA/Basin Opening Nar. at III-H-9.

The crux of WFA/Basin's argument in support of underfunding the marketing function is circular. They claim that because they are entitled to identify a traffic group pursuant to the SAC test, they can assume that traffic will be available over the entire SAC analysis period without expending resources that would ordinarily be required by a carrier to ensure the availability of that traffic. In other words, WFA/Basin argue it is not required to provide for traffic solicitation, which is the principal task of a railroad Marketing group. WFA/Basin state: "Unlike real-world railroads, the LRR does not need to engage in the constant solicitation of new business."[97] They assert "BNSF will be primarily responsible for the marketing function with respect to the interline coal customers,"[98] BNSF rejects WFA/Basin's argument that the LRR is free from all the responsibilities and costs of traffic solicitation. While that position might be appropriate with respect to the issue traffic to the Laramie River plant, it is totally unrealistic and manifestly unfair when expanded to include all of the third party traffic, including crossover traffic, which WFA/Basin propose LRR handle. That position allows LRR to attract BNSF traffic while leaving BNSF with almost all of the associated marketing expense. This position was rejected by the Board in *Xcel.*[99]

WFA/Basin's proposed staff of four marketers, two in-house and two consultants, are in actuality what railroads commonly refer to as "marketing support." WFA/Basin acknowledge as much when they state: "[i]n short, only 'maintenance marketing' for a

[97] WFA/Basin Opening Nar. at III-D-43.

[98] *Id.* at III-D-44.

[99] Slip op. at 67.

defined group of shippers is required."[100] Witness McCarren believes it is debatable whether four individuals could, in fact, even handle all of the "marketing support" required for LRR. BNSF currently employs four people just to handle equipment and service planning within its Coal Business Unit. WFA/Basin's entire support for outsourcing their marketing function is the bald assertion that "many other regional railroads presently out-source their marketing function" without identifying any single railroad.[101]

The largest discrepancy between WFA/Basin's vision of LRR and that proposed by BNSF witness McCarren comes in the areas of traffic solicitation, market analysis and pricing. These are the core functions of real-world railroad Marketing group. WFA/Basin, assuming a static world and an entitlement to traffic by virtue of the SAC test, assign no people and zero cost to these functions. Mr. McCarren, having run several regional carriers in the real world, constructs a Marketing group appropriate for a LRR that would actually have to solicit business from customers and be subject to the normal change in markets that affects real railroads. Such a position has been recognized by the STB in *Xcel*.[102]

While WFA/Basin present a coal market that is competitively static (although growing on a formulaic basis), in reality markets, even for utility coal, change considerably over 20 years. In order to retain existing business levels, railroads must be constantly soliciting new business to replace old traffic. BNSF witness McCarren reports

[100] WFA/Basin Opening Nar. at III-D-43.

[101] *Id.*

[102] Slip op. at 67-68. In that case the STB accepted a marketing staff of 7 for WCC with coal traffic of only 105 million tons per year.

that his company, A&M, anticipates a 5% attrition of existing business every year. That equates to a 100% turnover in the twenty year time frame of the typical SARR.

Mr. McCarren finds that real-world railroads are intensely concerned about their customer base and revenue levels and consequently make marketing and sales a senior management concern. Mr. McCarren has worked for seven railroads ranging in size from less than $15 million in revenues to over $3 billion over a 27 year period; every one of them has had a Vice President or General Manager running marketing and sales. Not only do all Class I carriers have such positions, but regional carriers such as MRL, DM&E, and FEC do as well. Mr. McCarren places a VP-Marketing at the head of BNSF's proposed LRR Marketing group, assisted by a secretary/administrative assistant.

BNSF witness McCarren has direct experience with the Monongahela Railway, having served as Regional Superintendent – Industrial Engineering for the Central Region of Conrail in 1983-84. The Central Region was based in Pittsburgh, PA and included all Conrail lines connecting with the MGA. Conrail was an owner of the MGA and at that time the dominant connecting carrier with respect to coal originated on the MGA. While taking nothing away from the marketing role performed by Mr. Reistrup on behalf of the MGA, Mr. McCarren observed that the bulk of the coal marketing effort with respect to joint MGA-Conrail traffic was performed by Conrail employees in 1983-1984. In fact, Conrail regarded the MGA as a jointly owned terminal railroad, much like the Belt Railway of Chicago or the Terminal Railroad Association of St. Louis, not as an independent actor in the coal market. MGA lengths of haul between mine and interchange were generally less than fifty miles. Indeed, Conrail supplied the bulk of the locomotives and carrier-owned equipment for its trains when operating on the MGA.

While the unique status of the MGA may have allowed Mr. Reistrup to handle its marketing requirements with minimal staff, that situation is not at all analogous to LRR, which is a vastly larger railroad and one *not* owned by its connecting carrier(s).

WFA/Basin do not specify the basis in Mr. Reistrup's experience for their conclusions on LRR's marketing staff. As to some of Mr. Reistrup's other railroad experiences, during his tenure at CSX that carrier employed a considerable marketing staff, and even following a major downsizing in late 2003/early 2004, continues to employ more coal marketing personnel than BNSF while enjoying a significantly smaller coal revenue base. Previously, when Mr. Reistrup headed the Traffic Department of the Illinois Central Gulf Railroad, that company employed a considerable workforce in the Traffic Department, which included sales, intermodal services and marketing, listing 81 positions (excluding intermodal operations).[103] Presumably, these were only the most senior people in the department.

WFA/Basin also rely on the experience of Mr. Weishaar at CNW/WRPI. However, his testimony does not help WFA/Basin here. The marketing staff at CNW/WRPI was 10.5 people, by no means comparable to the 4 person staff proposed here.[104]

BNSF witness McCarren observes that LRR proposes to handle 75.4% of the utility coal tons currently handled by BNSF,[105] all at the origin (mine) end. Much of this business is crossover traffic returning to BNSF, but even so LRR's annualized 2004 coal

[103] Official Guide of the Railways (May 1971).

[104] WFA/Basin Opening Nar. at III-D-47.

[105] (193,318,020 (WFA/Basin 2004 net tons) / 256,497,354 (BNSF 2004 coal tons) = 75.4%).

revenues of $306.3 million accounts for fully 13.5% [106]of total BNSF coal revenues. LRR will handle traffic for over 76 destination power plants,[107] each with its own fuel requirements and demand dynamics. This is not a simple business as claimed by WFA/Basin.

Further, the coal marketing business is changing. Once dominated by long-term contracts, rail coal markets have been characterized in recent years by decreasing contract terms. In fact, review of WFA/Basin's workpapers indicates that approximately { } of the coal in their LRR traffic group is moving under contracts that expire within three years of the 4Q04 start-up. The dynamic market place requires substantial marketing staff.

BNSF currently staffs its coal marketing group with 16 people. An additional four positions provide direct support of the coal marketing effort but are organized in different sub-departments. Naturally, in an organization as large as BNSF, coal marketing receives substantial indirect support from a variety of marketing support functions, which will generally be unavailable in the LRR environment. BNSF's coal marketing group also takes advantage of a large array of state-of-the-art information technology – indeed BNSF is widely acknowledged as the e-commerce leader among Class I railroads. The marketing group does not include customer service personnel, who are organized elsewhere (as they should be at LRR). BNSF provides two coal desks that operate 24 hours a day, 7 days a week, 365 days a year in its Network Operations Center; an "inner loop" desk that handles issues specific to the joint line in the PRB and an "outer

[106] ($306.3 / $2,277 (2004 BNSF coal revenues) in millions = 13.5%).

[107] As discussed in III-A.

loop" that handles all other coal traffic issues. In addition, BNSF coal marketing relies heavily on the Marketing Decision Support and Planning group to measure its operating performance relative to its commitments in customer contracts.

Of the 16 coal marketing employees, seven are directly involved with traffic, four handle equipment and service planning, two handle economic and cost analysis and one handles planning and related issues with the mines in the PRB. The remaining two positions consist of the group vice president and his administrative assistant.[108] Even including the four positions placed elsewhere in its organization, the BNSF marketing group is smaller than its principal competitor, UP, which listed 24 people as part of its "Energy Team Contact List" on the UP website in 2005. CSX employed 27 people in their coal marketing group following their recent reorganization and NS employed 39 in that capacity in 2004. With respect to coal marketing, BNSF is the "low cost, efficient provider."

Simple logic indicates that LRR should field, at a minimum somewhere between 14% and 75% of the BNSF group, based on revenues and tonnages (9% and 81% as revised by BNSF). LRR cannot assume that it may always rely on BNSF's coattails for its solicitation efforts.

Eliminating the vice president and administrative assistant from the group, and multiplying the remainder (14 people in the case of BNSF) by the more conservative figure (the percentage of BNSF revenue to be claimed by LRR) would yield two LRR coal marketing managers. Mr. McCarren constitutes the marketing group as a Vice

[108] *See* BNSF marketing organization chart at BNSF Reply electronic workpaper "BNSF coal marketing.pdf."

President Marketing, 2 Market Managers, plus an administrative assistant. LRR would continue to employ the outsourced resources specified by LRR for marketing support.

SAC precedent supports Mr. McCarren's conclusions. In *FMC*, slip op. at 166, the Board noted that in a SAC case "any business plan that assumes, . . . that it would retain all of its customers must devote resources to all those customers." WFA/Basin assume not only that LRR will retain BNSF's customers, but that it will attract some of them to use a different route.

This level of staffing, while higher than that provided by WFA/Basin, still provides an extraordinary level of staff productivity. Using LRR's revenue estimates, revenue yield per marketing employee will be $153.1 million in 2004.[109] BNSF witness McCarren believes that staff will need to be increased during the forecast period, when LRR revenues increase, ultimately by 69%.[110] Mr. McCarren would ordinarily increase staff by adding an additional coal marketing manager as traffic ramps up over the 20-year forecast period, however, he does not do so here. In the aggregate, LRR's revenue yield per marketing employee will increase to $161.4[111] million in 2024 with BNSF's adjustments.

Finally Mr. McCarren assumes travel and entertainment by the marketing employees at 15% of their annual salaries. He assumes 5% for all other G&A employees.

---

[109] ($76,569,920*4 = $306,279,680.43 / 2 people = $153,139,840).

[110] Annualized 2004 revenues = $306,279,680.43, 2024 annualized revenues = $518,790,466.47.

[111] ($322,795,212.94 / 2 people = $161,397,606.47).

iii) Engineering/Mechanical Function

Mr. McCarren agrees that a Vice President of Engineering and Mechanical would be appropriate for LRR. He also believes that person would require an administrative assistant. The remaining employees will be addressed in the Engineering and Mechanical sections.

iv) Outsourced Expenses

Mr. McCarren has discussed outsourcing marketing support costs with principals at three current providers of these services, Roy Blanchard at The Blanchard Company, Sandra Dearden at High Road Consulting, cited by complainants in their opening, and Gary Hunter at Railroad Industries, Inc. He also spoke with Michael Smith, President of the Finger Lakes Railroad, who formerly ran a company providing marketing outsourcing for small railroads. All note that this market is thin, because many clients ultimately bring their marketing efforts in-house. Mr. Smith notes that his customer relationships typically have a life cycle of four to six years. Much of the work is project-oriented, or is performed for shippers rather than rail carriers.

Witness McCarren believes that the outsourcing cost shown for the two outsourced support employees is too low for the services required. The high productivity assumed implies that high performing people need to be employed. While outsourcing allows LRR to avoid railroad retirement taxes and other expenses associated with railroad employees, even outsourced employees must receive sufficient compensation or they will leave and the resulting turnover will increase costs. Mr. McCarren notes that the lowest grade management marketing employees at WCS (MG12, generally with titles such as Manager – Equipment) earned on average $52,230 in 2001. The next higher grade

(MG13, generally with titles such as Assistant Manager – Marketing) earned on average $52,776. These figures represent pure salary, exclusive of profit sharing (generally 4% of salary), health benefits (approximately $8,000 annually), taxes and other benefits. Mr. McCarren estimates that on an outsourced basis, individuals of this caliber and experience would cost at least $75,000 annually, assuming a base salary of $52,500 and adding social security taxes, health insurance at $7,000 (based on 2003 family coverage insurance premiums at A&M), $5,000 in office, travel, and miscellaneous expenses and 10% profit margin for the outsource provider. Mr. McCarren believes this figure is conservative based on his discussions with the contract marketing group.

(c) Finance and Accounting Department

WFA/Basin propose that LRR can handle their Finance and Accounting functions with a mere 13 people.[112] The budget for this staff including $418,000 of outsourced services is $1.9 million.[113] Mr. McCarren believes that LRR could not perform its necessary functions with such a small staff and that it would be negligent to try to do so from a financial control standpoint. Regardless of the relative homogeneity of LRR's traffic, witness McCarren testifies that the vast majority of a railroad's basic finance and accounting requirements will remain constant. Only the revenue accounting and analysis and certain billing functions will be decreased due to the lack of traffic diversity compared with the incumbent BNSF's traffic base. To illustrate, $50 million dollars worth of track material purchases will create exactly the same accounting workload

[112] WFA/Basin Opening Nar. at III-D-36.

[113] *See* BNSF Reply electronic workpaper "G&A Charts.xls."

regardless of whether only coal or a diverse mix of commodities will be hauled across them once installed.

WFA/Basin's justification for such a small finance office is not only "the small number of discrete traffic flows involving a single commodity moving in trainload quantity," but also the LRR's proposed use of computerized programs to handle accounting functions.[114] However, WFA/Basin themselves acknowledge that such computerized programs are increasingly being used in the industry.[115] Indeed, witness McCarren notes that the computerized programs LRR plans to employ or similar computerized programs are already widely used by railroads. The programs do not run themselves. WFA/Basin simply do not provide sufficient staff to track expenses properly, pay invoices and conduct the other functions expected of the Finance Department of such a large company.

In comparison to LRR, WCS had 64 people in its Finance and Accounting Department, excluding Information Technology and Materials and Purchasing. The much smaller IMRL, with revenues of approximately $130 million in its last year of operations, had 34 non-information systems employees in its Finance and Accounting Department.[116] MRL, with revenues of { } million of 2002 revenues, have { } employees in its Accounting Department.[117] DM&E/ICE in 2004 had { } non-information systems Finance and Accounting employees and { } million in revenue.

[114] WFA/Basin Opening Nar. at III-D-45-46.

[115] *Id.*

[116] BNSF Reply electronic workpaper "IMRL_Admin_org.xls."

[117] BNSF Reply electronic workpaper "MRL_Info.doc."

Great Lakes Transportation, parent company of the Duluth Missabe & Iron Range and the Bessemenr and Lake Erie railroads, just acquired by CN, employed { } managers and clerks in its Finance and Accounting Department, with approximately $217 million in revenue. All these companies operate computer-based general accounting systems, some internally developed, some commercially acquired. For example, WCS used an enhanced version of MAS90, sister program to the MAS200 specified by WFA/Basin for LRR, A&M also uses MAS90, DM&E/ICE uses similar software from J.D. Edwards, as does G&W.

Mr. McCarren estimates that LRR will require a minimum of 28 Finance and Accounting employees, more than twice the number projected by WFA/Basin but still less than half that of WCS. This number takes into account the computerization planned by WFA/Basin and does not reflect returning any outsourced functions to the company, but simply insuring that the functions have appropriate oversight.

Both WFA/Basin and witness McCarren provide for a Vice President – Finance and an administrative assistant/secretary. In the Treasury area, WFA/Basin provide for a Treasurer but no other staff. They merely assert that the Treasurer will be able to attend to the Treasury function. Based on his experience at WCS and other regional companies, Mr. McCarren provides for an Assistant Treasurer and one Cash Manager. This staff is considerably smaller than the seven person Treasury office at WCS; however, it does take into account the fact that LRR is not a public company. Nevertheless, it is a company that claims to average close to $410 million in revenues[118] over the study period ($269.7 million under BNSF's revision). With operations that substantial, and with the

[118] WFA/Basin Opening Nar. at III-H-9.

complexities inherent in running a modern railway network, more resources in this area are required. LRR will be required to manage substantial cash flows and balances, and will have significant amounts of debt that need to be serviced.

WFA/Basin provide for a Controller, two Assistant Controllers and three clerks in the accounting area.[119] WFA/Basin provide a long laundry list of items these employees will be required to attend to without offering any explanation for how they will actually accomplish those tasks or evidence of other railroads that have effectively utilized so few resources so productively.

LRR is not a low-traffic railroad. Significant effort will be required to settle interline revenues with BNSF, even if BNSF handles the customer billing. Settlement in the railroad industry is far from straightforward, and a substantial number of interline bills require adjustment between carriers. Mr. McCarren provides for a Controller, one Assistant Revenue Controller and three clerks, for a total of five in this important area. In the revenue accounting area, WCS employed 19 people to process approximately the same revenue. LRR's lower level of traffic diversity, compared to WCS, allows LRR to operate with a much smaller and more productive staff.

In the disbursements area, Mr. McCarren finds LRR's staffing level insufficient compared with his experience at WCS and elsewhere. WCS employed an Assistant Controller, Manager of Accounts Payable and 3 analysts (clerks) in this area. Given the probable reduced level of capital expenditures for LRR, because the plant and equipment are new, a reduced staff is appropriate but more than an Assistant Controller will be required. At least one disbursement clerk is necessary. A person to handle accounts

[119] WFA/Basin Opening Nar. at III-D-36.

payables is also required, for control purposes as well as sheer work volume. Regarding payroll, although paycheck preparation is outsourced, which Mr. McCarren embraces, he thinks that one position will be necessary, to oversee this important area properly. After all, LRR employs over 413 people as proposed by WFA/Basin, 526 (650 if capitalized MOW employees are counted) as revised by BNSF, even with paycheck preparation itself outsourced, considerable oversight and correction activity will be required. In checking with LRR's proposed vendor, Paychex, Mr. McCarren learned that Paychex would require all payroll inputs to be submitted to them in electronic format, which will need to be done by LRR.

Both WFA/Basin and Mr. McCarren agree that a single tax expert will suffice for a railroad the size of LRR. The increased staffing Mr. McCarren proposes in other areas can also be used to support the tax effort where specialized subject matter knowledge is not required.

In the financial reporting area, WFA/Basin provide a single Manager. This is insufficient to generate the quantity and quality of financial information required by such a large company. Mr. McCarren employed seven people in this function at WCS. He believes that four would be required to staff the area at LRR adequately. This level of staffing is necessary because LRR has half the level of operating expense of WCS. LRR should provide the same level of financial information to its management, board and investors as WCS did. In addition, as a Class I railroad LRR will have substantial reporting requirements to the STB.

WCS employed a sub-group in Finance and Accounting responsible for analyzing revenue issues and trends and resolving substantive disputes that could not be quickly settled by revenue accountants. WFA/Basin fail to provide for such a function at LRR. While in an ideal world, most of this work would not be required, the real world of railroading includes overcharges and undercharges, systems' issues, miscoding of bills and a host of problems that need to be resolved. Even if LRR's employees perform flawlessly and its systems work to perfection, it has positioned itself as an interline carrier in an imperfect world. Given the large amount of revenue the LRR is expected to generate, Mr. McCarren finds that LRR has too much at stake to leave this area unprotected. He has provided a staff consisting of one person. LRR still benefits from the relative lack of traffic diversity; WCS employed five to handle these issues, with comparable total revenue.

Witness McCarren also adds a Manager of Car Equipment Accounting to manage the car hire payable and receivable issues and to oversee the outsourced routine transactions. This Manager will also handle any financial transactions regarding foreign locomotives on the LRR or LRR's locomotives when off-line. Mr. McCarren has also added a Manager of Miscellaneous Billing in this area, to handle billing of non-freight items such as joint facilities, real estate leases and easements, locomotive and freight car repairs, *etc*. WFA/Basin did not provide for a Manager of Car Repair Billing in the Engineering/Mechanical department so Finance will need to provide this function. Car Repair Billing is a specialty area that normally requires specific training and experience, even with the use of modern software such as RMI's *E-Repair*. More recently, railroads have been adopting information systems using hand-held devices. In order to operate with such a lean staff in Finance, Mr. McCarren has specified such a system for car repair activities as part of LRR's operating systems. Without such a system at least one additional person would be required in this area. Depending on the quantity of foreign car repairs performed, a second person may well be required. WFA/Basin provide no information on projected car repair activity, but with 62 equipment inspectors,[120] a significant repair volume would normally be expected.

Mr. McCarren has also provided a Director of Internal Audit. While WFA/Basin provide for internal systems review as part of their projected auditing expense, a company this size should not operate without an internal auditor. There is a frequent misperception that internal auditors are only required to investigate possible improprieties or perform forensic accounting. Most companies, including WCS, use their internal auditors primarily to ensure that their system of controls remains appropriate and that the relationship between operating organizations and the finance group enhances overall effectiveness. No matter how well structured an organization may be at startup, it needs to evolve over time and a good internal auditor helps ensure that this evolution does not compromise the essential system of checks and balances in a large organization.

i) Materials And Purchasing

BNSF's reply includes a centralized purchasing authority in the Finance Department as proposed by the WFA/Basin. LRR will have substantial purchasing requirements, well in excess of $20 million annually. Although some items can be purchased directly by the operating departments, larger purchases will invariably need review and approval at headquarters. Therefore, Mr. McCarren proposes a Manager of Purchasing reporting to the Director of Purchasing.

[120] WFA/Basin Opening Nar. at III-D-24.

ii) Real Estate

WFA/Basin provide no personnel to handle the real estate function. With more than 200 route miles, LRR will have some real estate issues. Most of these will take the form of crossings, licenses and easements for utility lines, cable TV and the like. Dealings with state departments of transportation on highway crossings and replacement of existing crossings will take considerable time. Municipal authorities seek new road crossings from time-to-time as well. While LRR is custom-designed for the traffic at hand, over time operations and facilities will change and some land will no longer be required while LRR will need to acquire additional property for new facilities. Mr. McCarren proposes a Manager of Real Estate. This person will handle issues with companies seeking cable and pipeline crossings, state DOT's and county highway departments doing new or expanded roads, and similar projects. This is a quarter of the force employed at WCS, which had substantially more road mileage than proposed for LRR. While WCS organized these individuals in the Engineering Department, they can be equally well situated in the Finance Department, and here report to the VP – Finance and Accounting.

iii) Outsourced Expenses

WFA/Basin include a cost of $250,000 for their annual audit, without offering any support for that cost estimate.[121] WCTC's audit fees in 2000 and 1999 were $264,000 and $240,000 in 1998. Given the increased scrutiny of corporate auditing in recent years, auditing fees have increased since 2000. Another comparable railroad, KCS, had audit

[121] WFA/Basin Opening workpapers "LRR GA Outsourcing.xls."

fees of $555,633 in 2004.[122] While LRR would not have the auditing fees associated with a public company, it would have fees associated with preparing R-1 financials for the STB. WCS, which was divided into Class II and III railroads for classification purposes, did not prepare an R-1. As a result, Mr. McCarren estimates that an appropriate annual audit fee for LRR in 2005 would be $275,000.

The $150,000 that LRR plans to pay for outside federal, state, local and property tax services appears to be adequate for the services specified, based on consultation with WCS' auditors, KPMG. In addition, start-up tax consultation would likely total an additional $15,000.

(d) Law and Administration Department

WFA/Basin propose a Law and Administration Department staffed by a General Counsel and two staff attorneys.[123] Figure III.D.3-12 below shows that the total cost for legal expense, including safety and claims personnel and a secretarial pool, is $1.1 million (of which $250,000 is outsourced) or 0.3% of revenue compared to the industry standard of 1.1%.[124]

---

[122] *See* KCS Proxy Statement and Fiscal Year 2002 Form 10-K; *see* BNSF Reply electronic workpaper "RR_Comparisons.xls," "KCS-proxy2005.pdf," and "KCS-10K_2002.pdf."

[123] WFA/Basin Opening Nar. at III-D-36.

[124] *See* BNSF Reply electronic workpaper "G&A Charts," spreadsheet "Legal vs. Rev Bar."

Figure III.D.3-13

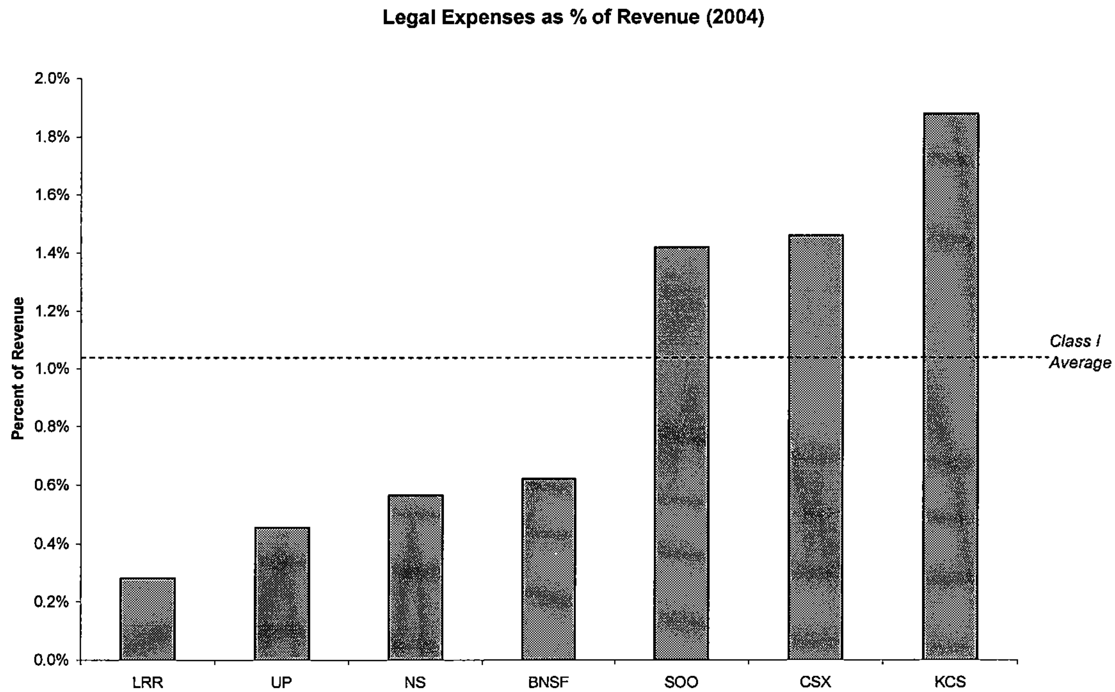
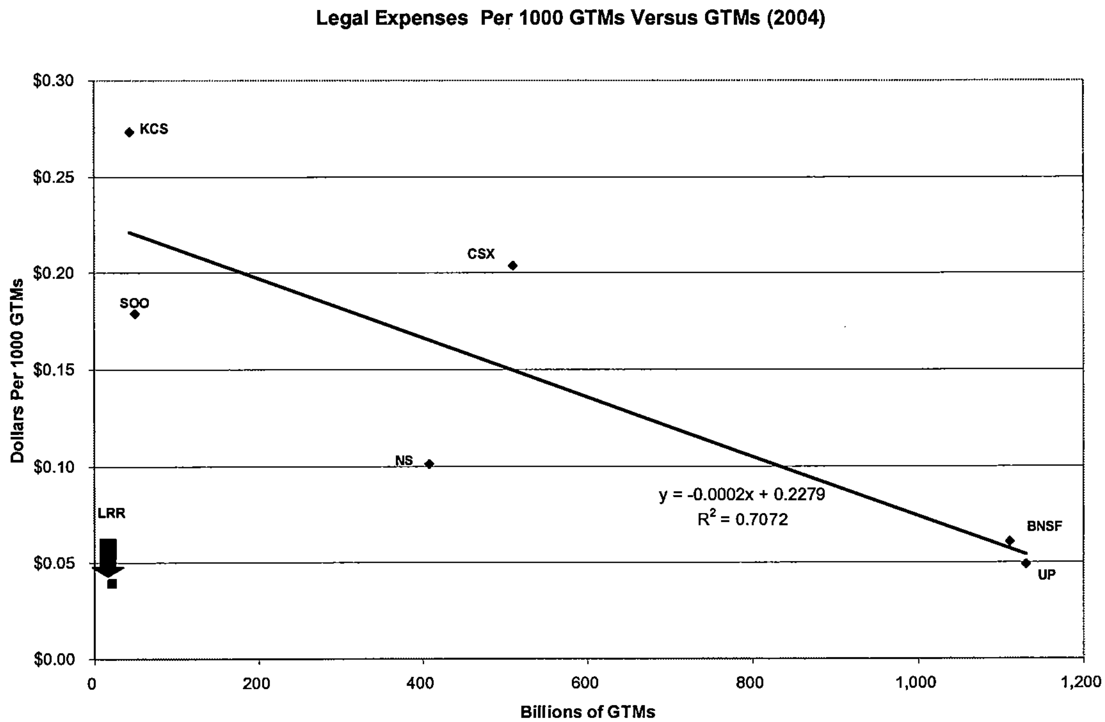


Figure III.D.3-14 shows that LRR's legal expenses on a per 1,000 GTM basis are significantly below what should reasonably be expected based on its GTMs. The expected legal expense for LRR based on the amount of traffic it moves should be approximately $0.23 per 1,000 GTMs not the $0.04 WFA/Basin have budgeted.[125]

[125] *See* BNSF Reply electronic workpaper "G&A Charts," spreadsheet "Legal vs. GTMs."

Figure III.D.3-14



Mr. McCarren notes that WFA/Basin's level of attorney staffing for LRR is comparable to WCS' staffing during most of his five-year tenure at the company. Therefore he concurs with the staffing level proposed by WFA/Basin, but adds a secretary/paralegal. Mr. McCarren also breaks out the Human Resources ("HR") and Information Technology ("IT") functions proposed by WFA/Basin into a separate sub-department.

i) Legal/Claims Function

In the Claims area, WFA/Basin provide a $125,000 annual outsourcing budget for claims services (3 FTE).[126] WFA/Basin include one Manager of Safety and Claims

[126] *See* WFA/Basin Opening workpaper "LRR GA Outsourcing.XLS."

within the Law and Administration Department. Again, Mr. McCarren's real world experience at WCS indicates that more resources will be required. Prudent and proactive management of safety, claims and loss control for such a substantial company requires more internal staffing than proposed here. As a standard of comparison, WCS employed 8 people in this area; MRL, with a much smaller operation, employs { }.[127] Both use outsourced claims services to handle major claims events. Mr. McCarren accepts WFA/Basin's outsourcing budget but increases the staff by providing a full-time claims manager and full-time manager of safety rather than the single position covering both responsibilities specified by WFA/Basin.

The three staff will handle the outsourced staff on routine claims items, safety and loss control and security. That staff will be responsible for coordinating the LRR safety effort company-wide, keeping abreast of industry best practices and ensuring that LRR policies minimize the probability of loss in a cost-effective manner. A modest corporate safety effort as outlined here is entirely consistent with and a necessary complement to the safety and training positions in the operating departments. In addition, they will function as a liaison with local law enforcement personnel. Again, this reflects common industry practice among smaller carriers (larger carriers have their own police forces). A close working relationship with local law enforcement is a key element to an effective loss control strategy, especially in the area of grade crossing safety and trespasser issues. Finally, Mr. McCarren would add a Director-Safety and Loss Control to oversee this area within the Law and Administration Department. The result of these additions is a Safety and Claims group of three individuals that continues to employ outsourcing. This

[127] *See* BNSF Reply electronic workpaper "MRL_Info.doc."

remains a very conservative projection; WCS outsourced claims expenses in 2000 for $439,000 and in 1999 for $561,000, far more than WFA/Basin propose.

ii) Human Capital and Training Function

WFA/Basin configure LRR as a large regional railroad spread out over 200 miles, passing through one state. WFA/Basin propose that LRR will employ 413 people in 2004. Significantly, WFA/Basin configure LRR as a non-union company.[128] BNSF has already established that LRR as proposed by WFA/Basin would qualify for Class I railroad status; as such it would be the only non-union Class I railroad. In fact, according to the American Short Line and Regional Railroad Association fully 66% of Class II and III railroad employees are also represented by a union.[129] Maintaining non-union status will be a difficult task and one that will require an unrelenting effort and continuing investment.

WFA/Basin propose to include one Director of Human Capital ("HR") within the Law and Administration Department with a Manager of Training reporting to that position, for a total of 2 people. WFA/Basin state "the primary responsibility of the in-house human capital stuff is to interface with the outside contractor and assure that the LRR has a pool of employees that enable it to engage in ongoing operations."[130] In fact, WFA/Basin only provide an estimate to cover outsourced training; no outsourcing budget

---

[128] WFA/Basin Opening Nar. at III-D-17.

[129] "North American Short Line and Regional Railroad's Profile," ASLRRA (Apr. 15, 2004).

[130] WFA/Basin Opening Nar. at III-D-39.

is provided for the other, critical HR functions. Therefore, Mr. McCarren includes two Managers: one of Personnel and one of Recruitment.

BNSF witness McCarren finds the staffing levels proposed by WFA/Basin to be infeasible, especially considering the purported non-union status of LRR. He draws on his experience with WCS, which in the United States was almost entirely non-union during part of his tenure and remained over 70% non-union up until its acquisition by Canadian National. WCS was by far the largest predominantly non-union railroad. Mr. McCarren notes that preservation of a non-union environment requires a more substantial and active HR Department than a traditional, unionized railroad. Sufficient HR employees need to be available to resolve employee issues that would otherwise be resolved through a grievance procedure in a union shop. Line operating managers have neither the time nor the ability to resolve such issues in a timely and fair manner.

While many HR functions are directly related to the size of the workforce, there are economies of scale in HR administration; specialized functions such as benefits administration do not increase proportionately with the work force. Therefore, to provide HR coverage equal to WCS, and remain non-union, LRR will require a ratio of HR professionals to overall employment similar to or slightly greater than that of WCS. LRR has only one position, the Director – Human Capital, assigned to directly interface with employees outside of the training area. That is clearly inadequate.

WCS employed a total of 13 personnel in HR, excluding Claims, which was part of WCS' larger HR Department. Unlike LRR, WCS did not centralize training within HR, but kept it with its corresponding operating departments. No training personnel were included within the 13 member WCS HR staff. WFA/Basin propose that LRR will employ 413 employees in 2004, whereas WCS employed an average of 2,239 in 2000, meaning LRR has 18% of the employee force of WCS. In reply, BNSF determines that LRR will require 526 employees in 2004 (excluding capitalized MOW employees), raising LRR's percentage in comparison to WCS to 24%.

WCS had nine people, exclusive of compensation and benefits personnel, directly assigned to support a larger workforce. These were the people interacting with the workforce on a day-to-day basis. Proportionately, LRR would require two under either proposal to achieve the same level of coverage. Mr. McCarren first revises the department by upgrading the Director – Human Capital to an Assistant Vice President. For reporting purposes this individual will continue to report to the Vice President – Law and Administration. To provide coverage of employee requirements, Mr. McCarren adds a Manager – Personnel and one HR Coordinator reporting to the AVP – Human Capital. Recruitment, both initial and ongoing, will be critical for the successful operation of LRR. Mr. McCarren adds a Manager – Recruitment to handle this important task.

LRR does not designate anyone to handle compensation and benefits, a key HR responsibility. Mr. McCarren adds a Manager – Compensation and Benefits. This position will develop the programs necessary to attract and retain staff, both hourly and managerial. As LRR grows, additional HR support would normally be needed to keep pace with an expanding workforce, although BNSF has not added such staff into its cost calculations.

WFA/Basin apparently believe that HR staff directly interacting with employees is an unnecessary luxury and intend to have all such interface done by computers. Mr. McCarren has had direct experience with union organizing efforts at several railroads.

He strongly believes that employees will make sure that they have individuals with whom they can interact about problems at work or other personal situations. If LRR fails to provide sufficient HR employees to cover this task, the employees will provide it themselves. However, instead of being known as HR Coordinators, the liaison personnel will then be known as the General Chairmen and Local Chairmen of their respective labor organizations.

Mr. McCarren does not believe that training should ordinarily be best housed within HR, especially when so much of it is to be outsourced. He has nonetheless honored WFA/Basin's configuration and retained the Manager of Training within G&A as WFA/Basin propose. By way of comparison, WCS had seven operating department trainers: one in Engineering, two in Mechanical and four in Transportation. LRR people will need periodic retraining in areas such as Roadway Worker Safety, Mechanical Safety, proper repair techniques, etc. In addition, attrition and new hires occasioned by business growth will add to training demand as well.

iii) <u>Information Technology</u>

Witness McCarren believes information technology ("IT") is the cornerstone for modern, efficient railroad service. IT affects railroad companies principally in two ways:

- Providing a strong, paperless, interface for routine customer transactions and information requirements; and
- Allowing increased rail productivity in all operating areas through real time information and advanced planning capabilities.

Advances in information technology have allowed railroads, especially over the past decade, to eliminate thousands of clerical positions and improve asset utilization, all while providing their customers with enhanced communication, shipment location and planning capability. In order to operate at the extraordinarily high productivity levels envisioned by LRR, even as revised by BNSF, LRR will require equally extraordinary IT capabilities.

Operating a unit coal train is conceptually simple. With respect to low volumes of traffic, it can, in fact, be operationally simple. However, operating with high train volumes at high levels of productivity as WFA/Basin contemplate for LRR is extremely challenging. Contrary to WFA/Basin's assertions, unit train sets do not simply cycle uneventfully between mine and power plant. Variations in coal supply and demand and other uncontrollable factors require short-term forecasting and planning. Those uncontrollable factors include unusual requirements such as disruptions at the mine, at the plant or in the rail network, and maintenance outages. All these factors require real time changes to even the short term plan. Strong IT capabilities support a carrier's ability to accomplish its tasks effectively and productively despite unplanned disruptions.

WFA/Basin propose staffing the Finance and Accounting Department with one information technology ("IT") Director and seven specialists. Total IT annual costs would be approximately $6.2 million or less than 2% of total revenues.[131] The highest level employee for the group, the Director would be paid $109,030.[132] Based on his experience with WCS and consultations with other operators of medium-sized railroads, witness McCarren believes LRR's IT annual operating cost is insufficient. Given the importance of IT to the success of the overall enterprise, Mr. McCarren has replaced the Director with an Assistant Vice President – Information Technology. This would allow IT to function as a separate sub-department within the overall Law and Administration

[131] *See* BNSF Reply electronic workpaper "G&A Charts.xls."

[132] WFA/Basin Opening workpapers "LRR Operating Expenses.xls."

Department. Railroads and railroad holding companies smaller than the proposed LRR typically have such positions (*e.g.*, WCS – AVP, Information Services, KCS – Chief Information Officer, G&W – VP, Information Technology, MRL – VP, Management Information Systems). Mr. McCarren adds an Assistant Vice President to run the sub-Department, as was the practice at WCS. IT is simply too important a function to be headed by a Director.

Another important change is the addition of three IT specialists to provide on-site 24x7 coverage of IT systems. WFA/Basin acknowledge the need for 24x7 coverage, but then paradoxically fail to provide that coverage in their staffing.[133] The high-tempo operations of LRR (given all the crossover traffic) demand constant availability of IT systems for dispatching, crew management and movement reporting. An outage of even a couple of hours could result in extreme costs associated with train delays and lost loading opportunities. Coverage from home by an "on-call" individual is not sufficient for the "always-on" LRR.

One more IT specialist is added to provide for maintenance and development of e-commerce applications and IT security systems. BNSF provides industry-leading e-commerce capabilities with many tools for the coal customer. These include a coal forecasting tool, coal train tracing, network maintenance plans, public pricing, and customer updates of all kinds. Not only must LRR provide this same level of service, it must deal with the increased threat to computer networks presented by viruses, worms, spam and all the other unwanted flotsam and jetsam on the internet. The same individual should be able to cover both tasks at a medium-sized company such as LRR. With these

[133] *See* WFA/Basin Opening Nar. at III-D-60-61.

changes, the total IT staff would continue to number only 12, only 57% the size of the WCS IT organization of 17 and communications staff of 4.

Based on his experience at WCS, Mr. McCarren finds that the proposed staffing levels, as revised, could handle the IT requirements of the workforce and information systems specified by WFA/Basin. WCS' 2001 organization plan called for an IT staff of 17 in a similarly outsourced environment. WCS also employed outside consultants (often as many as six) on a continuing basis to augment its work force. WFA/Basin do not make clear in their filing who will be responsible for the voice communication network – there appears to be one communications supervisor but no communication technicians provided in the Engineering Department, yet no one in the IT department is specifically assigned these duties (the network engineers are merely tasked to handle "any telecommunications issues which may occur"). The management of the voice communication network will be a considerable task, given the number of communication devices required and the pace of technological change in this area. Mr. McCarren has placed this responsibility in the MOW Department, which will be addressed in Section III.D.4.

iv) Environmental

Another important function that WFA/Basin fail to adequately staff is environmental engineering and compliance. Many railroads organize this function within their engineering department; however, it can be equally well situated under the General Counsel's office. BNSF witness McCarren suggests that this function be addressed by Mr. Albin in the Engineering Department.

v) Outsourced Expenses

The proposed outside legal budget of $125,000 (excluding claims) is substantially below the amount required for a railroad of this size and scope.[134] WFA/Basin offer no justification for this number. WCS paid legal fees of $821,000 in 2000, $1.8 million in 1999 and $1.6 million in 1998; an average of $1.4 million. Another regional carrier, MRL, reports spending in excess of { } million in 2001 alone.[135] DM&E/ICE spends approximately { } after deducting legal fees associated with major financing transactions. While some reduction in legal expense can be expected for LRR due to its smaller number of employees and mileage, a budget of nine times less than the WCS level is not credible. Mr. McCarren believes that outside legal expenses should be conservatively budgeted at $500,000.

WFA/Basin make no mention of outsourcing or material costs for HR other than training expenses. WCS found outsourcing the preferred route for applicant pre-employment testing (both attitude and aptitude). These tests greatly improved the quality of new-hires and reduced the percentage that failed to develop into successful employees or dropped out of training. *See* recruitment discussion at III.D.3.c.(4)(b). The expense of testing hourly employees is largely represented by the time and effort of HR professionals included in the proposed staffing levels. For supervisory and managerial hires, more expensive outside testing will be appropriate. WCS spent approximately $125 per finalist for these positions. Assuming three finalists per position, that represents

---

[134] WFA/Basin Opening workpapers "LRR GA Outsourcing.xls."

[135] BNSF Reply electronic workpaper "MRL_Info.doc."

an outsourced expense of $375 per position. Mr. McCarren has conservatively estimated testing costs at $100 per hired employee. In addition, HR at WCS administered a program of safety awards and incentives. Most companies in the railroad industry operate such programs in an effort to keep safety "top of mind" in their employees. At WCS, such programs cost approximately $70 per employee annually. Mr. McCarren adopts that unit cost for LRR. WFA/Basin also understate the cost of the IT associated with the HR program. A recent quote shows that LRR would have to pay $25,500 for the Optimum Solutions Suite for Windows, with support and maintenance of $5,610 annually and a $9,500 training and implementation cost.[136]

The shortcomings of the IT structure proposed by WFA/Basin lie not only in the staffing of the IT department but the absence of system support in key areas. WFA/Basin have configured a system typical of that employed by Class II and Class III railroads without the extensive, high density traffic envisioned for LRR. Indeed, the financial and operating systems proposed for LRR, with over $200 million in revenues, are basically the same as those used by the Arkansas and Missouri, a Class III carrier with less than $15 million in revenues. It would be possible to operate the LRR with the rudimentary IT systems environment envisioned, but it would not be feasible to operate it at the productivity and efficiency levels claimed. LRR would most certainly not attain the level of customer service currently provided by BNSF as required by the STB.

WFA/Basin propose to use the RMI *RailConnect* System as their base information system to support rail operations on the LRR. BNSF's witness McCarren has direct experience with *RailConnect,* because it is used by the Arkansas & Missouri

[136] *See* BNSF Reply electronic workpaper "Optimum Suite for Windows.pdf."

Railroad ("A&M"), of which he is Chairman and principal owner. A&M relies on *RailConnect* to support its rail operations. *RailConnect*, actually a suite of systems, encompasses basic transportation functions, revenue accounting, cash application, car hire payables and receivables, car repair billing, e-commerce and tracing, and internal reporting. RMI also offers associated systems for customer freight monitoring and bulk material handling facilities.

RailConnect is an internet-enabled operating system well suited for short line railroads and small regional carriers operating carload networks, although it can handle unit and intermodal trains as well. Its Transportation Management System ("TMS") module offers all the basic car and train movement functions expected in the contemporary railroad environment. It integrates the TMS and the Revenue Management System ("RMS") modules. *RailConnect* also offers very basic e-commerce functions such as car tracing, electronic bill of lading ("e-bol") and switching instructions through another module, *ShipperConnect*, which has not been included by WFA/Basin for LRR.

RailConnect does not, however, offer the breadth of functionality offered by major railroad operating systems such as BNSF's TSS, UP's TCS or CN's SRS. It also is not a system configured for a unit train environment in its off-the-shelf configuration. In 1999-2000, WCS explored moving to the *RailConnect* system to reduce its IT operating expenses. The company determined that it would remain with TCS due to the extra functionality that TCS provided. This included areas such as locomotive utilization and maintenance planning; car fleet management and advanced customer service support. Such systems allow for improved performance in their respective areas.

Even after adding the "e-bol" of *ShipperConnect,* the *RailConnect* suite does not match the e-commerce capabilities of BNSF (widely acknowledged as the leader in railroad e-commerce) or UP with respect to the specific needs of unit coal train customers. BNSF, for example, provides customers with forecasting tools for production and loading; train tracing tools that provide estimated time of arrival; updates on maintenance activities that may affect train movement; and statistics on current train performance. In today's world, e-commerce capabilities are every bit as much a service criteria as delivery times and equipment availability. Since BNSF currently provides a high level of e-commerce service today, the LRR must provide an equivalent level of service. LRR cannot do so with the systems specified.

In order to handle the high volume of unit train business properly and provide efficient interaction with customers, LRR will need to augment *RailConnect* with additional systems. At a minimum, it should include a unit train planning and reporting module and a coal train forecasting module. RMI has provided Mr. McCarren with a very rough quote of $300,000 to $500,000 to develop the former and, based on discussions with BNSF, Mr. McCarren estimates that the latter system could be built for $150,000. Mr. McCarren allocates another $200,000 in initial cost for web site development and integration with the various tools mentioned here. Such system additions and modifications will be required by LRR on an ongoing basis. Customer requirements will increase, rail industry requirements will change and management will always need new information. For example, in 2004 DM&E/ICE planned to spend $500,000 on custom programming to supplement their use of *RailConnect* with additional management reporting capabilities that year alone.

Mr. McCarren believes LRR should budget $200,000 annually in outsourced expenses for systems development and replacement connected with its use of *RailConnect*. A company as substantial as LRR will need to take generic *RailConnect* outputs and use them in management information systems specific to LRR.

WFA/Basin also fail to provide LRR with other systems critical to support high-productivity operations. For example, no maintenance-of-way systems are provided. Such systems have become indispensable for efficient maintenance operations on high-speed, high-tonnage railroads. These systems integrate the vast amounts of data provided by modern track inspection vehicles such as geometry cars, rail profiling equipment, gage-restraint measuring systems, and rail flaw detection vehicles. They also provide for efficient scheduling of maintenance activities in an environment where track time is an expensive and scarce resource.

The railroad industry does not have a wide choice of off-the-shelf, third party systems for Engineering; most large railroads have developed these systems internally. Keeping to the ASP model, Mr. McCarren has specified a system called *RailDOCS* under development by 10 East, Inc. that relies on hand-held units for C&S and track inspectors to facilitate data collection. This system is currently in place for C&S on CSX; its expansion to other facets of Engineering is under development. Mr. McCarren spoke with Clay Gillette who handles 10 East's sales to the railroad industry and obtained a cost estimate for 100 users of $6,500 monthly. It appears that LRR as envisioned by WFA/Basin would have approximately 35 users (*e.g.*, track inspectors, foremen, signal maintainers, *etc.* as well as their supervisors). Since *RailDOCS* is priced on a sliding scale, monthly usage is estimated at $3,000 or $36,000 annually. Mr. Gillette did not have cost estimates for incorporation of automated testing of vehicle data into the *RailDOCS* database available yet. Mr. McCarren estimates that at another $30,000 for a total of $66,000 annually for the *RailDOCS* system. It will also be necessary to develop project planning software for MOW. Mr. McCarren estimates $100,000 in development costs and $15,000 annually to operate such a system.

Similarly, WFA/Basin do not supply a system for car repair billing. While RMI offers such as system as part of *RailConnect,* current practice in the railroad industry is moving towards handheld units where repair information can be entered in the field. Such systems are offered by Wabtec and TMD. Such productivity-enhancing technology is critical for LRR, since no clerical position is specified for car repair billing. Mr. McCarren specifies the TMD system for LRR, which is the system used by A&M. Using A&M's costs as a model, he provides one hand-held unit for each 24-7 inspection crew specified by WFA/Basin plus a spare unit. Mr. McCarren estimates this system will have as initial cost of $19,000, plus $49,000 annually.

LRR also fails to specify a system for tracking locomotive utilization and repair billing. Most large regional railroads have such a system, either purchased as part of a larger system suite (*e.g.*, WCS), developed internally (*e.g.*, DME/ICE), or adapted from software developed for other industries (*e.g.*, MRL). Witness McCarren estimates the development costs for a system integrated with *RailConnect* and the Alstom Dispatching System to be $200,000; annual expenses for updating the system would likely run 15% of the initial cost, or $30,000. Integration of the various LFF systems is critical to achievement of the high labor productivity envisioned by WFA/Basin (even as revised by

BNSF). These tasks cannot be efficiently handled for a railroad as busy and large as LRR with the simple desktop spreadsheet approach apparently envisioned by complainants.

It also appears that the up-front cost for AEI readers fails to include the cost of installation. Based on a recent quote from Comet Industries for the A&M,[137] Mr. McCarren estimates that installation will cost about $11,500 per unit. LRR has 8 units,[138] producing an installation cost of $92,000.

WFA/Basin specify a general human resources system that will be adequate for handling general HR requirements. However, due to the specific and burdensome requirements for testing and certification of railroad operating employees, especially locomotive engineers, additional systems support will be necessary in this area (and is employed today by the incumbent, BNSF). In the case of LRR, Mr. McCarren specifies the *InfoRail* system from RailSoft Systems, Inc. in lieu of doing this manually with clerks (which are not included in LRR staffing). WFA/Basin propose to employ 363 operating employees (including non-executive management) whose certifications, qualifications, etc. need to be monitored and maintained. Annual license fees will cost $10,925 for *InfoRail* in addition to a one-time set-up fee of $2,500. BNSF's staffing revisions increase operating personnel levels to 460, which will increase costs to $13,350.[139] RailSoft Systems provides on-site training for $1,000 per class plus travel expenses. Mr.

---

[137] *See* BNSF Reply electronic workpaper "AEI quote.pdf."

[138] WFA/Basin Opening workpapers "LRR - Operating Budget.xls."

[139] *See* BNSF Reply electronic workpapers "inforail.xls." and "infoRail license fee quote.doc."

McCarren estimates that three classes including travel expenses will cost LRR approximately $3,000.

WFA/Basin use MAS200 for general accounting software on LRR. BNSF witness McCarren also has experience with the MAS family of products. WCS used and A&M uses a similar product, MAS90. Mr. McCarren notes that the capabilities of MAS90 were strained at WCS, and that the vendor, Best Software, Inc., recommends a higher-level product, MAS500 for companies the size of LRR.[140] Mr. McCarren spoke with Mr. Brian Wilson, Sales Representative at Best Software, Inc., makers of the MAS500 (and also MAS90 and MAS200) software. He confirmed that for a company the size of LRR that MAS500 would be the best-fitting product of the three, and that they normally do not recommend MAS200 for companies exceeding $100 million in revenue. MAS90 is more limited yet, with a maximum of 15 users. MAS500 is sold through reseller partners; however, he estimated that implementation and purchase cost for a company the size of LRR would run approximately $100,000 in initial expense. There are no ongoing expenses unless one buys a service contract, but the 15% allowance that WFA/Basin builds in would definitely apply to this as well. There would be start-up training costs as well; Mr. McCarren estimates these at $10,000.

In the IT area, BNSF witness McCarren has updated the pricing of the various *RailConnect* modules to those currently published by RMI. Applying those prices to the units specified by WFA/Basin (with the small exception of increasing the use of e-bol to provide for all the loaded coal trains) he arrives at an annual cost of $5,821,609[141] rather

---

[140] *See* http:// www.bestsoftware.com/mas500

[141] *See* BNSF Reply electronic workpaper "LRR RMI Charge Calculation.xls."

than the $5,156,848[142] cited by WFA/Basin. This covers the TMS, RMS, e-BOL and Car Hire systems within *RailConnect*. The Board should accept BNSF's estimates of RMI costs based on RMI's actual price list from April, 2004, rather than WFA/Basin's costs that are based on quotes from November, 2000, which are then indexed by WFA/Basin's consultants.

The RMI system specified by WFA/Basin is, however, qualitatively different from current BNSF systems in terms of customer information and e-commerce capabilities. BNSF is widely regarded as possessing industry-leading capabilities in these areas. The RMI system is not its equal in this regard. BNSF witness McCarren uses both systems on a regular basis in his role at the Arkansas and Missouri and is well acquainted with the different scope afforded by each. BNSF's systems, of course, represent the investment of vast sums justified by enormous volumes of traffic. LRR cannot reasonably be expected to invest, say $100M in industry-leading IT systems. Yet under the notion of a SARR, LRR is required to provide the same level of service as incumbent BNSF.

To resolve this potential dilemma, BNSF witness McCarren specifies another component of RMI's *RailConnect* suite of software not specified by WFA/Basin. This is the Shipper Connect - Freight Management System ("FMS"). While not encompassing all the functionality available through BNSF, FMS provides key customer information in a user-friendly format. In addition, the FMS application provides data to feed the web functionality that LRR will need to provide its customers.[143] Like the balance of

---

[142] *See* WFA/Basin Opening workpaper "LRR - Operating Budget.xls."

[143] *See* BNSF Reply electronic workpaper "Shipper Connect — Freight Management Systems.pdf."

RailConnect, FMS is an outsourced service hosted by RMI and so fits into the overall IT scheme devised by WFA/Basin for LRR. Based on LRR's proposed carloadings and RMI's April, 2004 price list, the initial annual fee for FMS will be $3,225,708.[144]

Given the critical importance of operating systems to the ultra-high density LRR, Mr. McCarren also adds a redundant data back-up line between LRR and RMI in Atlanta, at a cost of $13,200 annually, included in the communications budget. Taken together, the corrected *RailConnect* billings and the FMS charges total $9,035,317 annually.

LRR would also need to deploy a virus, content and spam alert service comparable to the one employed by BNSF to ensure that its vitally important PC system remains secure and viable. BNSF pays *Trend Micro* $11/work station/year for that software and service on a high volume discount basis. Mr. McCarren conservatively assumes that same cost for LRR's laptops at a total cost of $1,166 per year.[145]

In total, Mr. McCarren's estimate for outsourced IT expenses is approximately $9.4 million. At 3.1% of revenues[146] (4.4% as restated by BNSF) this figure comports well with real-world experience in the railroad industry. WCS budgeted 2.8% of revenue in its final year of operation, 2001; KCS anticipated spending 6% of revenue on IT in 2004. Paul Pascutti, VP-Marketing of RMI estimates that most small railroads' IT spending falls within a range of 2½ to 4% of revenue.

---

[144] *See* BNSF Reply electronic workpaper "LRR RMI Charge Calculation.xls."

[145] ($11*38 laptops)+($11*68 desktops).

[146] $9.4 million / $306.3 million = 3.1%, $9.4 million / $214.6 million = 4.4%.

Table III.D.3-15

Operating System - Application Annual Costs	WFA/Basin's Estimate	BNSF Estimate	Difference
RailConnect Suite	$5,156,848	$9,035,317	$3,878,469
Application Software Maintenance	$31,606	$34,440	$2,834
Operating system – related enhancements	$0	$200,000	$200,000
InfoRail	$0	$13,350	$13,350
RailDOCS	$0	$66,000	$66,000
Project Planning Software	$0	$15,000	$15,000
TMD	$0	$49,000	$49,000
Locomotive System - upgrades	$0	$30,000	$30,000
Trend	$0	$1,166	$1,166
Total IT Annual Optg Budget	$5,188,454	$9,444,273	$4,255,819

(2) Compensation

Regarding compensation for executive level employees, Mr. McCarren recommends salary levels based on a survey of salaries at public railroads. For non-executive level salaries, Mr. McCarren relies upon 2003 BNSF Wage Form A and B average annual salaries escalated to fourth quarter 2004 levels as discussed in the operating section above. The compensation for LRR operating and transportation personnel was discussed in detail in Section III.D.3.a. The compensation for the LRR Engineering and Mechanical personnel is discussed in Section III.D.4, below. The salaries and benefits for the LRR executives and G&A personnel Mr. McCarren recommends are summarized in Table III.D.3-16 below. In addition to these compensation costs, Mr. McCarren accepts WFA/Basin's assumption of 38.5% in fringe benefits.

As a preliminary matter, Mr. McCarren notes that the location of LRR's headquarters in Guernsey, Wyoming would not justify lower executive salaries than the salaries of railroads set out in the prior table. On the contrary, if anything, Mr. McCarren believes that LRR's salaries would need to be increased because of the need to attract qualified employees to Guernsey. Nonetheless, he does not assume that the LRR would have to pay higher salaries as a result of the location of LRR headquarters and sets executive level salaries based on comparable railroads.

Mr. McCarren has surveyed publicly available information on executive level compensation at Class I, II and III railroads. That analysis summarized in Table III.D.3-16 below, shows salaries and bonuses for several railroad executives.

Table III.D.3-16

		Annual Compensation			**Long Term Compensation**		
Railroad	**Executive Position**	**Salary**	**Bonus**	**Other Annual Comp**	**Restricted Stock (Cum.)**	**Stock Options**	**Compensation (includes LTIP)**
BNSF	President & CEO	$980,000	$238,552	$0	$9,166,365	326,441	$231,345
(2004)	EVP & Chief Marketing Officer	$475,000	$5,000	$0	$2,523,920	56,400	$22,650
	EVP & COO	$480,000	$1,251,150	$0	$1,285,896	112,812	$82,959
	EVP & CFO	$411,000	$70,784	$0	$2,207,126	132,177	$74,148
	EVP Law & Gov. Affairs, Sec.	$389,000	$1,017,450	$0	$1,069,482	84,435	$67,462
CN	President & CEO	$1,250,000	$3,500,000	$1,162,823	$8,100,000	-	$550,823
(2004)	EVP & CFO	$475,000	$652,500	$0	$0	-	$214,442
	EVP - Sales & Marketing	$475,000	$652,500	$15,430	$0	-	$249,920
	EVP - Operations	$324,000	$381,700	$7,425	$0	-	$132,309
	SVP - Public Affairs, Chief Legal Officer, Sec.	$305,000	$380,100	$0	$0	-	$0
CSX	Chairman, President & CEO	$850,000	$850,000	$416,594	$0	-	$26,500
(2004)	President & CEO - CSX World Terminals	$403,952	$272,668	$18,336	$0	-	$14,915
	EVP & CCO	$357,867	$300,000	$3,135	$0	-	$12,736
	EVP & COO - CSXT	$358,696	$260,000	$19,552	$759,000	-	$287,819
	EVP & CFO	$500,000	$385,000	$801	$0	-	$141,000
Illinois Central	President & CEO	$500,000	$387,500	$18,615		85,500	$175,734
(1998 10-K)	Senior VP - Operations	$217,420	$130,920	$71,522		30,000	$48,520
	Senior VP - Marketing & Sales	$188,674	$113,620	$11,657		30,000	$35,874
	VP, GC & Secretary	$173,982	$96,710	$12,676		19,500	$42,172
	VP & CFO	$188,674	$104,880	$10,808		19,500	$44,503

		Annual Compensation			Long Term Compensation		
Railroad	**Executive Position**	**Salary**	**Bonus**	**Other Annual Comp**	**Restricted Stock (Cum.)**	**Stock Options**	**Compensation (includes LTIP)**
KCS	Chairman, President & CEO	$649,104	$0	$0	$0	103,689	$100,962
(2004)	Former EVP & COO	$329,604	$0	$0	$0	51,195	$49,807
	EVP & CFO	$273,000	$0	$0	$0	44,539	$29,649
	SVP - International Engg of KCSR	$212,508	$0	$0	$0	22,771	$29,195
	Associate Gen. Counsel & Corp. Sec.	$164,904	$0	$0	$0	8,000	$20,302
Norfolk	Chairman & CEO	$1,000,000	$2,000,000	$587,901	$3,568,000	160,000	$2,891,913
Southern	President	$369,750	$238,260	$17,981	$334,500	30,000	$338,491
(2004)	V Chair & Chief Mktg Officer	$575,000	$718,750	$83,451	$1,115,000	50,000	$936,976
	V Chair & CFO	$575,000	$718,750	$239,598	$1,115,000	50,000	$956,921
UP	Chairman & CEO	$1,350,000	$0	$171,105	$0	325,000	$3,515,260
(2004)	Vice Chairman	$843,334	$0	$179,309	$0	165,000	$1,922,973
	President & COO RR	$545,417	$0	$56,928	$0	100,000	$1,232,671
	EVP - RR Operations	$485,000	$0	$916	$0	85,000	$1,231,309
	EVP - RR Marketing & Sales	$370,833	$0	$123	$0	44,000	$939,461
Wisconsin	President & CEO	$551,250	$104,462			100,000	
Central	President & CEO (N.Am.)	$300,000	$58,590			40,000	
(2000)	Executive VP & CFO	$200,000	$31,580			27,000	
	Executive VP - Corp. Dev.	$200,000	$31,580			27,000	
	VP & Chief Accounting Officer	$160,260	$32,613			14,800	
Emons	Chairman, President & CEO	$250,000	$69,672				$23,490
(2001)	SVP, CFO & Secretary	$144,815	$34,139				$9,364
	VP	$130,000		$2,224	$48,125		
	VP	$112,400	$36,228				$15,787
Florida East Coast	Chairman, President & CEO	$600,000	$685,000	$0	$1,093,813	-	$2,015,795
(2004)	Vice Chairman	$362,250	$312,927	$0	$423,784	-	$8,470
	EVP; President FEC Railway	$350,000	$358,750	$0	$250,672	-	$7,228
	President, Flagler Development	$323,000	$269,412	$0	$250,092	-	$6,535
	EVP & CFO	$259,195	$221,003	$144,288	$747,806	-	$5,013
	EVP, Sec. & Gen. Counsel	$290,000	$265,716	$0	$250,672	-	$5,716
Genesee &	Chairman & CEO	$601,000	$229,022	$0	$179,993	56,250	$886,312
Wyoming	President & COO	$333,631	$92,932	$0	$83,997	26,250	$395,503
(2004)	CFO	$334,001	$90,912	$0	$119,995	37,500	$59,171
	SVP, General Counsel, Corp. Sec.	$212,000	$58,643	$0	$71,997	22,500	$1,590
	EVP - Gov't & Industry Affairs	$276,769	$74,728	$0	$0	5,000	$2,869
	President - Mktg. & Development	$196,299	$0	$0	$0	-	$1,610

		Annual Compensation			Long Term Compensation		
Railroad	**Executive Position**	**Salary**	**Bonus**	**Other Annual Comp**	**Restricted Stock (Cum.)**	**Stock Options**	**Compensation (includes LTIP)**
Pioneer Railcorp (2004)	Chairman, President & CEO	$700,617	$0	$0	$0	-	$0
Providence	Chairman & CEO	$364,985	$0	$28,127	$0	-	$41,367
&	President & COO	$314,140	$0	$1,086	$0	-	$44,460
Worcester	VP - Engineering	$132,155	$0	$296	$0	-	$8,920
(2004)	Treasurer	$147,151	$0	$333	$0	-	$10,005
	Secretary & Gen. Counsel	$119,949	$0	$108	$0	-	$8,097
RailAmerica	CEO & Director	$208,333	$33,750	$40,375	$99,975	5,000	$24,911
(2004)	President, CAAO, Sec. & Director	$433,500	$90,227	$20,327	$0	12,000	$52,835
	EVP & COO	$262,500	$49,055	$20,421	$0	12,000	$20,646
	EVP & CFO	$275,000	$147,125	$0	$0	12,000	$62,247
	SVP & Gen. Counsel	$222,000	$43,976	$0	$0	6,000	$19,683
	Former Chairman, CEO & President	$218,164	$0	$13,769	$31,192	-	$7,114,995

(a) President/CEO

The salary that WFA/Basin propose for the President/CEO is based on the supposed 2003 salary level of the President/CEO of KCS. In 2003, the KCS President, received total compensation (salary and bonus) of $630,000 and other compensation valued at $92,621 including 105,901 stock options.[147] LRR, as a private company, has no such stock option offering. WFA/Basin's salary for the CEO/President must be rejected because it fails to account for important elements of compensation.

The survey presented in Table III.D.3-16 shows a salary range of $208,333 to $1,350,000 for railroad CEO's. Bonuses for those same employees ranged up to $3,500,000, excluding stock options and other compensation. Stock options were granted to almost all those executives, ranging from thousands to hundreds of thousands of

[147] WFA/Basin Opening Workpapers, Vol. 8 at page 04854.

shares. Many received restricted stock as well, ranging in value to over $9 million in the case of the largest railroad. In addition, other annual compensation for those individuals went as high as $3.5 million. WFA/Basin significantly understate the comparable level of compensation for railroad industry chief executives.

The railroad with revenues closest to — but lower than — that projected for LRR was FEC with $201 million. FEC is a subsidiary of Florida East Coast Industries, a publicly traded corporation. The President of the railroad, however, received $708,750 in salary and bonus in 2004, as well as $250,672 in restricted stock and $7,228 in other compensation. The Chairman, President and CEO of FECI received an even higher level of compensation. Similarly the President and COO of Genessee & Wyoming, with $304 million in annual revenues, received over $900,000 in total compensation (including equity) in 2004 while its CEO and Chairman received over $1M; KCS's ($640M in annual revenues) CEO and President received approximately $750,000 in 2004. RailAmerica, with $396M in 2004 revenues, cannot be compared due to an executive restructuring at that company. Mr. McCarren agrees with the choice of KCS for LRR, however, he believes the most current and complete compensation data should be used. Use of the KCS as a model takes advantage of the relative stability of compensation for that position.

These salaries reflect a significant appreciation in the price of railroad executive talent in the past several years; consequently old information cannot be appropriately used to determine the salary of LRR's President and CEO. In the current (2004) environment, Mr. McCarren believes that $750,000 represents a competitive salary for the talent required to lead LRR.

(b) Vice Presidents

Using the same survey, Mr. McCarren notes that compensation for senior level vice presidents varies widely with the type of company and organizational structure. Many companies have Chief Operating Officers responsible for a significant section of their network, but LRR's structure is simplified and features strong department heads reporting directly to the President and CEO. The total compensation of several similar jobs to the WFA/Basin's department heads at mid-sized railroads can, however, be identified:

- KCS (2004) EVP - ($302,649)
- KCS (2004) COO - ($379,411)
- G&W (2004) – Marketing & Dvpmt ($197,909)
- WCTC (2000) Exec. VP – Corp. Devp. ($231,580)
- G&W (2004) SVP, GC, Corp. Sec. ($344,230)
- KCS (2004) AGC ($185,206)
- FEC (2004) EVP, GC & Secretary ($812,094)
- G&W (2004) CFO ($604,079)
- FEC (2004) EVP & CFO ($1,377,305)
- KCS (2004) EVP & CFO ($302,649)
- WCTC (2000) Exec. VP & CFO ($231,580)

With the exception of FEC employees, these individuals all received significant stock option grants along with their cash compensation; such equity compensation will not be possible at the privately-held LRR.

LRR plans to set in place a salary plan compensating vice presidents of four major departments ranging from $255,232 to $281,731 for salary and bonus, based on WCS' compensation in 2003.

As it happened, 2003 was a poor year for KCS which saw its operating results reduced by a difficult information system change. Undoubtedly bonuses and incentive compensation were reduced that year as well.

As set forth above, when stock option and restricted stock consideration is included, competitive market compensation in 2004 for the major department head positions is well above the levels proposed by WFA/Basin. Nonetheless, Mr. McCarren believes that qualified individuals could be attracted to these positions if sufficient bonus compensation were added to raise expected cash compensation to $325,000. The Marketing Vice President position will require this pay level as well, given the degree of marketing challenge and the increased department size recommended by BNSF. Table III.D.3-17 below, summarizes the G&A Compensation used in BNSF's Reply Evidence:

Table III.D.3-17

Comparison of WFA/Basin's and BNSF G&A Personnel Compensation

Position	WFA Count	Salary	Total	BNSF Count	Salary	Total	Difference
President and CEO	1	{ }	{ }	1	{ }	{ }	$80,127
Director of Corporate Relations	1	{ }	{ }	1	{ }	{ }	$0
Administrative Assistant	1	{ }	{ }	1	{ }	{ }	$18,067
Vice President - Transportation	1	{ }	{ }	1	{ }	{ }	$69,768
VP - Engineering and Mechanical	1	{ }	{ }	1	{ }	{ }	$69,768
Administrative Assistant	2	{ }	{ }	2	{ }	{ }	$36,135
Manager of Operating Rules and Safety	1	{ }	{ }	1	{ }	{ }	$0
VP - Marketing	0	{ }	{ }	1	{ }	{ }	$325,000
Administrative Assistant	0	{ }	{ }	1	{ }	{ }	$65,178
Director of Marketing and Customer Service	1	{ }	{ }	In Operating Costs			($109,030)

Position	WFA Count	Salary	Total	BNSF Count	Salary	Total	Difference
Customer Service Managers	11	{ }	{ }	In Operating Costs			($1,123,648)
Marketing Managers	2	{ }	{ }	0	{ }	{ }	($204,300)
Manager - Coal Marketing	0	{ }		2	{ }	{ }	$182,137
Vice President - Finance & Accounting	1	{ }	{ }	1	{ }	{ }	$43,268
Administrative Assistant	1	{ }	{ }	1	{ }	{ }	$18,067
Manager of Budgets and Purchasing	2	{ }	{ }	0	{ }	{ }	($182,137)
Clerk/Analyst	3	{ }	{ }	0	{ }	{ }	($239,421)
Treasurer	1	{ }	{ }	1	{ }	{ }	$95,326
Assistant Treasurer	0	{ }	{ }	1	{ }	{ }	$111,335
Cash Manager	0	{ }	{ }	1	{ }	{ }	$88,037
Director Tax	1	{ }	{ }	1	{ }	{ }	$20,993
Controller	1	{ }	{ }	1	{ }	{ }	$95,326
Assistant Controller Revenue	1	{ }	{ }	1	{ }	{ }	$20,993
Assistant Controller Disbursements	1	{ }	{ }	1	{ }	{ }	$20,993
Director - Financial Reporting	0	{ }	{ }	1	{ }	{ }	$109,030
Manager of Financial Reporting	1	{ }	{ }	1	{ }	{ }	$20,993
Senior Financial Analyst	0	{ }	{ }	2	{ }	{ }	$159,614
Revenue Accounting Clerk	0	{ }	{ }	3	{ }	{ }	$239,421
Manager - Accounts Payable	0	{ }	{ }	1	{ }	{ }	$109,030
Manager - Payroll	0	{ }	{ }	1	{ }	{ }	$109,030
Manager - Revenue Analysis	0	{ }	{ }	1	{ }	{ }	$109,030
Manager - Car Equipment Accounting	0	{ }	{ }	1	{ }	{ }	$109,030
Disbursement Clerks	0	{ }	{ }	1	{ }	{ }	$79,807
Manager - Miscellaneous Billing	0	{ }	{ }	1	{ }	{ }	$109,030
Director - Internal Audit	0	{ }	{ }	1	{ }	{ }	$109,030
Manager of Administration	0	{ }	{ }	1	{ }	{ }	$109,030
Director - Budgeting and Analysis	0	{ }	{ }	1	{ }	{ }	$109,030
Manager of Real Estate	0	{ }	{ }	1	{ }	{ }	$109,030
Director of Purchasing	0	{ }	{ }	1	{ }	{ }	$109,030
Manager of Purchasing	0	{ }	{ }	1	{ }	{ }	$109,030
VP - Law and Administration	1	{ }	{ }	1	{ }	{ }	$19,768
Administrative Assistant	1	{ }	{ }	0	{ }	{ }	($47,111)
Assistant/Paralegal	0	{ }	{ }	1	{ }	{ }	$79,807
General Attorneys	2	{ }	{ }	2	{ }	{ }	$0
AVP - HR	0	{ }	{ }	1	{ }	{ }	$275,000
Administrative Assistant - HR	0	{ }	{ }	1	{ }	{ }	
Manager - Safety & Claims	1	{ }	{ }	0	{ }	{ }	($91,069)
Director - Safety & Loss Control	0	{ }	{ }	1	{ }	{ }	$109,030
Manager - Safety	0	{ }	{ }	1	{ }	{ }	$109,030
Manager - Recruitment	0	{ }	{ }	1	{ }	{ }	
Manager - Personnel	0	{ }	{ }	1	{ }	{ }	$109,030

Position	WFA Count	Salary	Total	BNSF Count	Salary	Total	Difference
Human Resources Coordinator	0	{ }	{ }	1	{ }	{ }	$88,037
Director of Human Resources	1	{ }	{ }	0	{ }	{ }	($109,030)
Director - Compensation & Benefits	0	{ }	{ }	1	{ }	{ }	$109,030
Claims Manager	0	{ }	{ }	1	{ }	{ }	$88,037
Manager of Training	1	{ }	{ }	1	{ }	{ }	$17,962
AVP - Information Technology	0	{ }	{ }	1	{ }	{ }	$275,000
Director of Information Technology	1	{ }	{ }	0	{ }	{ }	($109,030)
IT Specialists	7	{ }	{ }	11	{ }	{ }	$319,228
Total	**50**	{}	{ }	**66**	{}	{ }	**$2,552,901**

(3) Materials, Supplies & Equipment

BNSF has reviewed the individual item unit costs that make up the overall material and expense costs for LRR G&A personnel. In general, BNSF accepts those items' unit costs, but applies them to the correct number of G&A personnel as determined by Mr. McCarren. Where Mr. McCarren has identified specific requirements for the LRR that were not included by WFA/Basin, they have been added. In addition, Mr. McCarren adds $250,000 for miscellaneous purchased services and other. These funds will pay for miscellaneous costs such as janitorial service contracts, landscaping, catering, and other miscellaneous unplanned operating costs. WCS spent approximately $1.7 million on such expenses in 1999.[148]

(4) Other General and Administrative Expense

(a) Professional and Outside Services

As explained in detail above, WFA/Basin propose to outsource some LRR functions. In recent SAC cases, the Board has accepted proposals to outsource several G&A functions as the basis for accepting the complainant's G&A staffing levels and cost estimates. However, in this case, as Mr. McCarren notes, WFA/Basin offer absolutely no

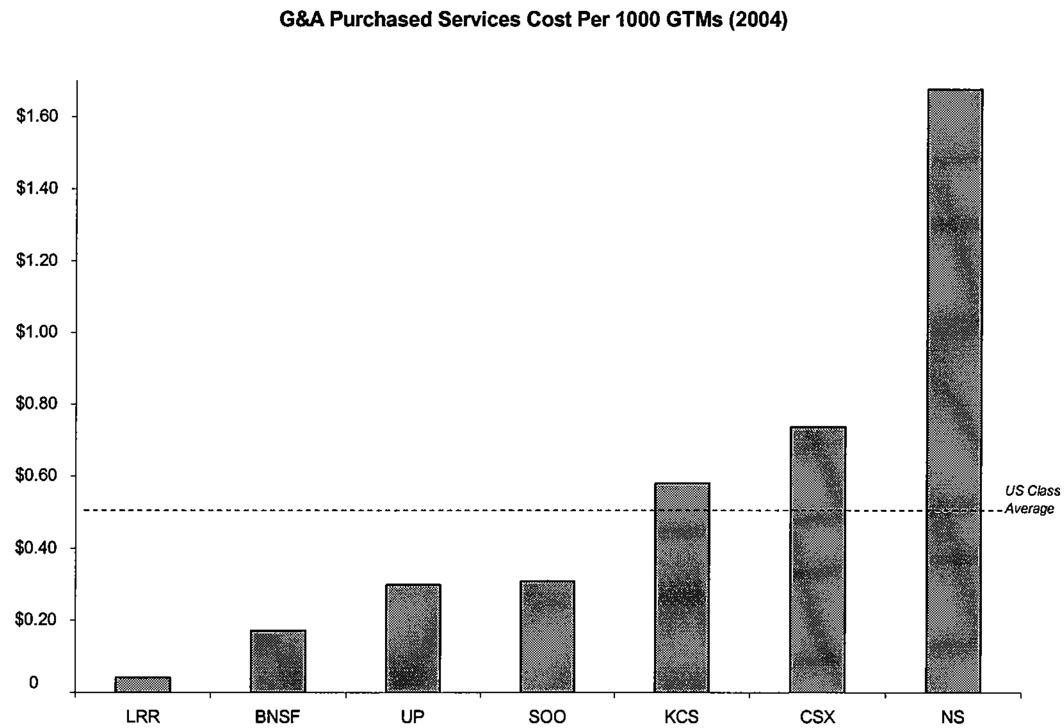
[148] *See* BNSF Reply electronic workpaper "WCS Other expenses.xls."

basis for their outsourcing cost estimates or staffing levels. By comparison, Mr. McCarren has provided substantial evidence to justify the outsourcing costs he employs and the level of staffing to expect in an outsourced environment. *See* discussion of outsourcing in sections above. A major area of outsourcing for LRR is initial training of operating employees, which is discussed in the following section.

Mr. McCarren contends that WFA/Basin's claim of the efficiency to be expected at LRR by outsourcing of G&A functions is significantly undermined by an analysis of LRR's expected budget for purchasing G&A services compared to Class I carriers. While WFA/Basin contend that they will rely more heavily on outsourcing G&A functions than the Class I's do, in fact Figure III.D.3-18 shows that LRR expects to spend only 4% of its total G&A expense (or $0.04 per 1,000 GTM) on purchased services while Class I's spent on average 46% (or $0.50 per 1,000 GTMs) in 2004.[149]

[149] *See* BNSF Reply electronic workpaper "G&A Charts," spreadsheet "PS by Account."

Figure III.D.3-18



This is clearly an anomalous result that severely undercuts WFA/Basin's G&A proposals.

(b) Start-Up And Training

WFA/Basin provide no support for their recruiting costs or how initial employees will be hired except citations to the Board's opinion *Xcel.*[150] In order to ensure the largest pool of applicants and therefore the highest-quality of new hires, the company would likely advertise broadly in areas where it will have a concentration of employees. Unlike most start-up railroads developed in the past 20 years, LRR is not purchasing a line of railroad from BNSF with a pre-existing employment base. Thus the recruitment

[150] WFA/Basin Opening Nar. at III-D-68.

task will be considerably greater than normally faced by new railroad companies. The Board has previously rejected the notion the LRR can expect to hire BNSF staff, which have been laid off as a result of the SARR.[151]

Railroad recruiting has been anything but easy of late. For example, recent publications discuss the problems railroads are encountering in filling train service positions.[152] In fact, UP spokesman John Bromley is quoted as saying that the railroad plans to "hire about 3,000 people this year [2004] and continue hiring for the next five years at the rate of 2,000 plus each year...nearly everywhere on [the] system, with emphasis on the West." The article goes on to state that "[c]rew shortages and service problems are not just limited to UP...North Dakota and Montana have been especially critical of rail car shortages on BNSF lines." Finally, the article specifically notes the fact that simply hiring personnel does not directly ease manpower shortage problems because of the lengthy training periods involved (four months). Clearly, significant training expenses are being incurred by the railroads.[153] In fact, railroads are having difficulty even finding people to train. Thus it stands to reason that railroads would incur significant recruiting *and* training costs for the same rank-and-file employees.

This point was vividly illustrated in a speech by Jack Koraleski, UP Executive Vice President – Marketing and Sales, given to the American Short Line and Regional Railroad Association annual meeting in St. Louis, MO on April 24, 2004. He spoke about Union Pacific's effort to hire more employees, principally train and engine service,

---

[151] *CP&L*, slip op. at 66-67.

[152] *Rail Business*, "UP Hiring to Address Crew Shortages," Vol. 10, No. 7 (Feb. 16, 2004).

[153] *Id.*

to ease the shortage currently causing service difficulties for UP customers and connecting short lines. In his speech, he stated that 30-35% of all potential new hires fail to pass the pre-hire drug screen and that another 30-35% fail to meet the literacy requirement. A substantial percentage of those who make it past those two tests fail to satisfactorily complete training requirements or find that they don't care for the requirements of railroad work. John Gray, UP Vice President and General Manager – Business Development, also in attendance at the same meeting, indicated that in some areas UP realizes only a 5-10% yield (performing service one year from hire date) of initial would-be hires. BNSF reported a similar experience, in 2004, it accepted 400 applications for train and engine service in Tulsa and ultimately ended up with approximately 35 promoted conductors.

Mr. McCarren concludes that a start-up company would have to advertise 100% of the hourly and first-level supervisory workforce. Because of a need to generate a large candidate pool, extensive advertising will be required. For hourly workers, this would focus on local media and internet services, supervisory and higher level positions would likely also be advertised in trade publications.

Headhunters would be used to staff high-skill, specialty positions such as communications technicians, signal maintainers or dispatchers would be placed through recruitment firms. In addition, headhunters are commonly used for placing executives, especially where a start-up of this magnitude is envisioned. Mr. McCarren believes that the President, and 50% of the Assistant Vice President and Vice President positions would likely be filled through executive search. According to Mr. McCarren, the normal fee for these executive level services is 33% of the first year salary and bonus. Such searches are normally done on a retained basis, where the search firm is paid whether or not they produce the successful candidate.[154] Nonetheless, BNSF assumes a more conservative fee of 25% of the first year salary for all LRR's employees above the first level supervisor.[155]

WFA/Basin propose using Mohawk Valley Community College and the National Academy of Railroad Sciences for T&E employee training. They further assume that 25% of T+E employees would be experienced engine men, 50% experienced conductors and 25% with no railroad experience.[156] As the discussion above, regarding the difficulty railroads are having finding employees, indicates these are not reasonable assumptions. BNSF witness McCarren believes that LRR would more likely find that only 25% of successful applicants possessed previous railroad experience (likely split 15% conductor and 10% locomotive engineer). Therefore LRR would have to invest more heavily in initial training than it projects.

While the third party training costs may well reflect the charges of the two organizations mentioned, BNSF witness McCarren finds that the total cost of training the initial work force and subsequent replacement training will be far higher than estimated by WFA/Basin. BNSF currently trains new hires for train service (regardless of experience or community college study) for 15 weeks in the territory in question. Three of those weeks represent classroom training. Mr. McCarren reviewed LRR's conductor training program with David L. Davis, a former Gateway Western Chief Train Dispatcher

[154] *Topgrading,* by Bradford D. Smart, at 80 (1999).

[155] *See* BNSF Reply electronic workpapers "III D Operating Expense.xls," spreadsheet "Summary."

[156] WFA/Basin Opening Nar. at III-D-66.

who trained conductors under contract for Union Pacific in 2004. Mr. Davis reports that for graduates from outside training programs the supplementary training plan at UP involves five weeks of classroom training. Clearly LRR's program is insufficient in this area.

In the case of experienced conductor hires, Mr. McCarren agrees with LRR's adoption of his approach in *AEP Texas*. In that case, Mr. McCarren proposed that experienced conductors spend three weeks in classroom training and nine weeks in OJT training. So the overall training period required of experienced conductors is 12 weeks as compared to 15 that the novice requires.

Mr. McCarren testifies that the largest portion of training expense is not the cost of the classroom training, but the wage costs for the employees undergoing that training and the subsequent on-the-job training. Typical training periods at many large carriers run four months for conductor training and an additional three to four months for engineer training (assuming the engineers are already conductors). Not all carriers reimburse new employees for outside conductor training and at some carriers, such as WCS, the engineer training may be shortened to some extent based on candidate performance. Mr. McCarren further connects training expenses as follows:

- "Conductor becoming Engineer" training is inadequate at 17 weeks – BNSF's program is 20 weeks, including 4-5 classroom weeks. This was just recently reduced in 2004 from 24 weeks as a result of new simulator technology. WFA/Basin should use the BNSF standard.

- Experienced Engineers should have five weeks of classroom training and twelve weeks OJT (as specified by LRR).

- Classroom training course cost is based on the weekly training cost times the number of weeks in training.

- All employees are compensated for travel expenses at WFA/Basin proposed rates during classroom training.

- 80% of full wages are paid to all employees regardless of experience throughout the training period.
- Fringe benefits are paid.

In addition to the training cost and associated wages, there is a drop-out factor to be considered. Mr. McCarren has found 20% to be an appropriate drop-out rate for trainee conductors and 10% for conductors training to become engineers. Given this attrition, carriers must over hire and over train to achieve their personnel requirements. For example, when WCS needed 10 conductors, it hired 12 assuming that two would drop out before matriculating. These drop-outs consume training expenses and will generally go through about half the training period before falling out. In order to hire the 12, of course, the LRR would interview and test far more, perhaps over 100, to find acceptable candidates. This factor is especially significant in the current environment where hiring quality train and engine personnel is unusually difficult. LRR has accepted these attrition rates in its filing.

All of these factors work in concert to increase the cost of hiring and training T&E personnel quite substantially over WFA/Basin's estimate. Rather than the $7.5 million estimated by WFA/Basin, Mr. McCarren believes that start-up T&E hiring and training will total $12.3 million.[157]

LRR's expenses also need to reflect recruitment costs on an ongoing basis. These are normally organized under the HR Department. BNSF attrition of { } is close to what Mr. McCarren experienced at WCS and is less than what the A&M experiences today. The BNSF rate appears to be an appropriate level to use for replacement. With WFA/Basin's projected work force of 413, a { } attrition rate creates { } openings

[157] *See* BNSF Reply electronic workpaper "III D Operating Expense.xls."

each year. With BNSF's proposed work force of 526, annual replacements total { }. The 3% attrition rate used by LRR is unreasonable,[158] notwithstanding its appearance in a magazine article seven years ago. A 3% attrition rate implies an average career of 33 years in one job classification, clearly not an appropriate assumption in today's world where employees change jobs and companies with great frequency. Recent changes to the railroad retirement act have provided full retirement with 30 years service and have served to shorten average railroad careers. Such an assumption is even more improbable in combination with WFA/Basin's supposition that LRR would hire 75% of its T&E workforce with previous railroad experience. Using the more reasonable { } attrition rate Mr. McCarren estimates annual training costs of $0.67 million, exclusive of the cost of the manager and assistant managers of training in Human Resources.

Finally, Mr. McCarren notes that WFA/Basin have not provided for initial costs associated with financing the construction of LRR. The I.C.C. specifically contemplated shippers using the "prevailing market cost" for the cost of raising capital in stand-alone cases. *Coal Guidelines*, 1 I.C.C.2d at 545. The cost to construct the LRR is discussed in Section III.F below. Raising capital, particularly in the amounts contemplated here, is not cost free. Mr. McCarren participates in various rail industry development opportunities and has recent experience with raising capital for acquisitions and construction. In this area, the SARR model does not closely resemble the real world. New rail investments made with private equity would typically be leveraged with more debt than the average for the rail industry. Both the equity and the debt would carry a higher cost than the average for well-established Class I railroad companies. To cover

[158] *See* BNSF Reply electronic workpaper "III D Operating Expense.xls."

the required costs and return, the company would need to earn a 14-15% return on total capital invested, substantially higher than the STB's industry cost of capital.

The SARR framework does not provide for this sort of market-based approach to raising capital. In order to raise the lower-cost capital envisioned for the LRR, WFA/Basin would need to engage investment bankers to locate appropriately situated investors for whom such a deal would be attractive. Based on discussions he had with Peter Gilbertson, the President and CEO of Anacostia & Pacific, an expert in railroad startups, Mr. McCarren believes that LRR would need to raise this equity capital and it will cost approximately 4% of face value. His conclusion is in keeping with the ICC's conclusions regarding the flotation costs for equity capital from BNSF's last issuance of new equity in 1991. In *Ex Parte No. 506*, Railroad Cost of Capital-1991, 8 I.C.C.2d 402, 414-5, decided Apr. 17, 1992, the Commission determined "3.87% flotation cost occurred for the Burlington Northern stock sale." This is significantly less than the expected fees of 6.9% experienced in the softer 2004 market for a public IPO.[159]

d. Other — IT Requirements

See discussion in Section III.D.3.c.(1)(d) above.

---

[159] *See Wall Street Journal*, "Investment Banks See Fees Shrink in Battle With New Rules, Rivals," page A1 (May 18, 2004).

4. Maintenance-Of-Way

BNSF's principal maintenance of way witness is Gerald G. Albin of TranSystems Corporation. Mr. Albin has many years of experience constructing and maintaining rail lines subject to heavy tonnage and time-sensitive freight. He has provided testimony for BNSF on MOW issues in several recent SAC cases. From 1970 through 1980, he held the positions of Assistant Maintenance Engineer, Regional Engineer, and Maintenance Engineer for The Burlington Northern Railroad Company ("BN") (predecessor to BNSF). From 1980 to 1988, he held various staff positions (Director & Assistant Director Maintenance Planning) in St. Paul and Kansas City as well as working for four years as Chief Engineer of the BN Springfield Region. From 1988 to 1995, he held the positions of Director Engineering, Chief Engineer Field Operations, Superintendent Roadway Engineering, and Assistant Chief Engineer of Design/Construction for the Southern Region of BN. During that period, Mr. Albin was directly in charge of maintenance and engineering activities on the LRR route. He has managed the construction of coal track including the design and construction of the grading, drainage structures, track and signal work. Mr. Albin has extensive experience supervising maintenance activities, and is well acquainted with the practice and problems associated with maintenance on lines experiencing similar tonnages and traffic as WFA/Basin proposes for LRR. Thus, he is well positioned and highly qualified to critique WFA/Basin's evidence and opine on the actual maintenance requirements for these lines. BNSF's MOW evidence is also sponsored by Cassie Gouger, PE, Manager at FTI Consulting. Ms. Gouger developed the electronic Excel spreadsheets showing Mr. Albin's maintenance-of-way costs.

Unlike complainants in other recent cases, WFA/Basin based its MOW plan on the assumption that most of the day-to maintenance will be performed by in-house MOW personnel. In prior cases, the complainants have used the shell game of assuming contractors performed the operating MOW work and then avoiding any detailed consideration of the actual work that would be performed by the contractors. WFA/Basin's focus on an in-house MOW work force allows the Board to carry out a more careful review of WFA/Basin's assumptions. As explained below, that review demonstrates that WFA/Basin's plan provides too few people to perform the myriad day-to-day MOW activities on a high tonnage Class I railroad such as the LRR. Further, WFA/Basin fail to equip its forces with the necessary equipment to perform its work and they substantially understate the ownership, maintenance and operating costs of the equipment that they do provide. To the extent that WFA/Basin assume that outside contractors will perform work that is left behind by the inadequate in-house work force, WFA/Basin fail to budget sufficient resources.

a. WFA/Basin's Proposed MOW Plan is Out-of-Line with The Real World

WFA/Basin's MOW plan is out-of-line with BNSF's real-world experience of maintaining the replicated lines. As Mr. Albin explains, based on its quarter-century experience in maintaining heavy-axle load, high-tonnage coal lines, BNSF has developed a highly efficient maintenance plan that utilizes state-of-the-art technology and equipment and fully utilizes its in-house MOW workforce. BNSF's experience in maintaining the replicated line segments, many miles of which have similar tonnages to LRR, is indicative of what LRR can expect. WFA/Basin's MOW plan, however, assumes that it can maintain adequately the LRR's lines with far fewer personnel and for far less cost then BNSF currently incurs to maintain those same line segments.

WFA/Basin's MOW plan includes less than half the number of MOW field workers that BNSF currently employs to perform OE maintenance on the lines replicated by LRR. WFA/Basin include just 62 OE MOW field workers[160] to maintain LRR's 218 route miles/391 track miles.[161] This equates to 6.3 track miles per field worker. By contrast, BNSF currently employs 132 OE MOW field workers[162] on the lines replicated by LRR. BNSF's personnel on these lines equate to 3.2 per track mile. A comparison of the two field workforces are set out in Table III.D.4.1.

Table III.D.4-1
Comparison Of WFA/Basin's MOW Field Workforce
For LRR to BNSF's Force For The Segments Replicated By LRR

Department	WFA/Basin	BNSF's Actual
Track Department	45	73
Signals Department	14	35
Communications Department	0	10
Bridge & Building (B&B)	3	11
Electrical Department	0	3
Total	**62**	**132**
Total Track Miles (not including yards, set-outs or helper track)*	391	416
Track Miles/Employee	**6.3**	**3.2**

*WFA/Basin Opening Nar. at Table III-B-2; BNSF Reply electronic workpaper "MOW BNSF Rail Miles.xls."

160 For comparison purposes, this headcount excludes managers/supervisors, signal maintainers assigned to the Guernsey dispatch center, and work equipment mechanics and it includes the three inspectors that WFA/Basin assigned to the head office but are more appropriately treated as field workers.

161 391 track miles is based on WFA/Basin's opening evidence and do not include yard, set-out or helper tracks.

162 This headcount also excludes managers/supervisors. It also does not account for personnel that are not directly located on the replicated lines even though their work supports maintenance activities on the line, e.g., purchasing and stores personnel, signal and communication employees assigned to the Ft. Worth dispatch center, and B&B and electrical MOW employees assigned to the locomotive repair shop at Alliance. BNSF Reply electronic workpaper "BNSF Workforce Comparison.pdf."

WFA/Basin's total OE MOW costs are similarly out-of-line with the real-world costs that BNSF incurs. For its variable costs calculations, WFA/Basin analyzed BNSF's invoices to UP for MOW work performed on the Joint Line. That line comprises approximately 45 percent of LRR's route on a route mile basis. WFA/Basin's study purports to show that BNSF incurred a total of { } million in 2003 in OE MOW costs to maintain the Joint Line.[163] This equates to per track-mile OE costs of { } indexed to 2004) and per route-mile OE costs of { } indexed to 2004)}[164] as compared to WFA/Basin's 2024 OE MOW costs of $25,303 per track-mile[165] and $45,284 per route-mile for LRR.[166]

If the Joint Line per track mile cost were applied to the LRR, the total MOW OE costs would be { } million[167] as compared to the $9.9 million in MOW OE costs that WFA/Basin assume. This large disparity between real-world experience and WFA/Basin's costs is even greater on a route mile basis. If the Joint Line per route mile

---

[163] The { } million 2003 OE MOW total that WFA/Basin calculated includes UP's share of the Joint Line MOW costs. BNSF has not audited WFA/Basin's study of BNSF's Joint Line costs and does not endorse its accuracy.

[164] While these costs are a useful reference, they are also likely understated. They reflect 2003 MOW costs only. MOW costs, however, are cyclical in nature which is why URCS uses a normalized cost based on five years of data. For example, the 2003 Joint Line costs included virtually no derailment costs. By contrast, in 2005 there have been two derailments in the PRB, including one involving a Laramie River train, at an estimated cost of more than { } Therefore, BNSF's track and route mile MOW expenses for these lines will likely be higher in 2005.

[165] $9.9 million / 391 mainline track miles = $25,303. This calculation is based on WFA/Basin's total MOW OE costs for 2024 of $9.9 million. As discussed in section III.D.4.g. below, however, WFA/Basin improperly reduce LRR's MOW cost based on tonnage. As a result, WFA/Basin's 2004 costs are further understated.

[166] $9.9 million / 218 route miles = $45,284.

[167] { } million.

cost were applied to the SARR, the total MOW OE costs would be { } million.[168] By either measure, WFA/Basin's MOW costs are dramatically lower than BNSF's real-world experience would indicate.

Moreover, since the Joint Line invoiced costs do not capture all costs that the SARR must bear, the costs of maintaining the LRR would reasonably be expected to be higher than the Joint Line costs on a mainline track-mile and route-mile basis. The Joint Line costs do not include costs associated with maintaining a major yard and related facilities, including the fueling facility, dispatch center, and locomotive repair shop, among others.[169] The WFA/Basin MOW costs that are being used for comparison purposes include yard MOW costs but do not include yard track-miles. The 2003 Joint Line costs also include virtually no derailment costs and none of the special stabilization maintenance costs associated with tunnels and Wendover Canyon (see section III.D.4.i.(3)(l)(ii) below) as those facilities are not located on the Joint Line. Even without taking these additional MOW costs into consideration, the substantial difference in OE maintenance costs for the Joint Line and those proposed by WFA/Basin is striking.

WFA/Basin defend their minimal staffing as being comparable to UP's purported MOW staffing on 200 miles of track between North Platte and Gibbon, Nebraska. To support their comparison, WFA/Basin cite a document titled "Gang Worksheet." It is unclear what this document represents, how it relates to other parts of UP's MOW workforce or even how WFA/Basin obtained it. It certainly does not account for UP's

[168] { } million.

[169] These yard facility MOW costs are certainly higher on a route mile basis than costs to maintain a road route mile.

entire MOW workforce in this territory and does not even appear to account for all of its MOW track department field employees that work in this territory. Moreover, the document appears to reflect staffing for a far smaller territory (120 miles) than the 200 miles that WFA/Basin claim.[170]

In any event, WFA/Basin's comparison with UP is limited to track section crews and does not consider any other position in the track department or in any other MOW department. Mr. Albin generally agrees with WFA/Basin's track section crew assumptions which are consistent with BNSF standards.[171]

While Mr. Albin agrees with WFA/Basin's track section crew assumptions, as explained below, WFA/Basin provide too few, or omit altogether, several key positions from LRR's in-house MOW workforce. WFA/Basin omit communications maintainers, testers, and inspectors; electricians; and radio shop technicians and include too few signal maintainers and welders, among other positions. Indeed, the "Gang Worksheet" that WFA/Basin rely upon to support their track section crew assumptions shows that their welder crew assumptions are inadequate. It shows four two-man welder crews for UP's 120 mile territory. WFA/Basin, however, include only three such crews for LRR which cover a substantially larger territory.

WFA/Basin attempt to support their minimal staffing assumptions by reference to WRPI, but their comparison with WRPI is meaningless.[172] Other than their witness Mr.

[170] BNSF Reply electronic workpaper "UP Workforce Comparison.pdf."

[171] The Track Department includes positions in addition to track section crews. WFA/Basin omit or provide too few of these other positions.

[172] WFA/Basin also rely on the Buckingham Branch Railroad Company's ("BBRC") proposed MOW plan for a stretch of rail line in Virginia that it is acquiring from CSXT.
(Continued ...)

McDonald's recollection of WRPI two decades ago, WFA/Basin provide no support for their claims, which are totally unverifiable. Moreover, Mr. McDonald's recollections are not credible. For example, according to Mr. McDonald, one track crew based at Lusk was supposedly responsible for maintaining 87 route miles of track which was carrying 86.7 MGT by 1994.[173] An 87-mile territory on a high tonnage coal line is unheard of. Indeed, four of the five territories that WFA/Basin proposes for the LRR are less than half that size. In Mr. Albin's experience, one crew simply could not have handled a maintenance district of this size and tonnage. Further, Mr. McDonald's failure to identify any bridges & building or electrical personnel, among other key positions also suggests that his MOW headcount for WRPI is incomplete. Indeed, he acknowledges in a footnote that CNW provided seasonal MOW forces to perform maintenance on WRPI's 107 route miles, but Mr. McDonald does not include these forces in his headcount. WFA/Basin Opening Nar.at III-D-92 n. 31.

In any event, WRPI's MOW experience is not representative of a stand alone railroad's MOW requirements because of the unique nature of WRPI. While Mr. McDonald focuses on only the portion of WRPI that was maintained and operated by CNW (the Joint Line portion was maintained and operated by BNSF), that portion lacked many of the facilities that LRR will need and therefore likely required fewer MOW

WFA/Basin Opening Nar. at III-D-93 n. 32. However, the relevant rail lines will carry a fraction of the tonnage LRR will carry and are maintained to standards well below LRR's lines. Use of the BBRC's MOW plan for these lines as a benchmark for the MOW needs of a western, high-tonnage, heavy-haul, coal railroad such as LRR is absurd.

[173] Mr. McDonald claims that the track crews based at South Morrill, NE and Douglas, WY were each responsible for maintaining the yard at those locations and the first 10 miles of adjacent track. WFA/Basin Opening Nar. at III-D-91. This leaves the track crew at Lusk with responsibility for the remaining 87 route miles of track.

personnel. Among other things, WRPI lacked a central communications and dispatch center as trains were dispatched by BNSF on the Joint Line portion and CNW on the non-Joint Line portion. By contrast, the stand-alone LRR is responsible for all maintenance and operations on its line and must therefore maintain its own dispatch center and centralized communications system. It is likely that there are numerous other facilities on LRR that WRPI neither required nor had. The lack of any documentation makes a meaningful comparison impossible.

b. WFA/Basin's Use of Outside Contractors to Perform OE MOW Work Cannot Justify WFA/Basin's Understated OE MOW Costs

The vast difference between WFA/Basin's plan and BNSF's real-world experience cannot be explained by WFA/Basin's assumed use of third party contractors.[174] In only a couple of instances do WFA/Basin use contractors to perform OE work that is typically performed by BNSF in-house. WFA/Basin assume that some B&B spot maintenance and some communication spot maintenance will be performed by outside contractors. As a result, LRR's in-house MOW forces, which consist mainly of track maintenance and signal/communication personnel, would have to perform nearly all of the OE MOW activities that BNSF's in-house forces currently perform.

[174] Reliance on outside contractors and cross training to justify skeletal in-house MOW workforce has been used by complainants in other rate cases and has been rejected by the Board, most recently in *Xcel*. As to use of cross-trained employees, the Board stated that "[Xcel] also failed to meet its burden of establishing that a small, cross-trained MOW staff would be available and, even if available, how such a small MOW department could provide the unplanned day-to-day maintenance that would be needed by a railroad the size of the WCC." *Xcel* at 79. As to use of outside contractors, the Board stated that it "rejects the notion that the MOW function can be outsourced." *Id.* The Board should reach the same conclusion here.

Moreover, to the extent that WFA/Basin use contract forces, there is no reason to expect that LRR will reap substantial efficiencies from using outside contractors as WFA/Basin claims. There is no credible reason why use of outside contractors to perform spot maintenance would result in greater productivity than BNSF and other Class I's currently realize using in-house forces. Indeed, as Mr. Albin explains, BNSF's manages its in-house forces to ensure that they are fully utilized. BNSF adjusts its MOW force size as necessary in order to address changing needs and conditions and thereby make the best use of all forces. WFA/Basin's claims regarding efficiencies are unsupported.

A case in point is building maintenance. WFA/Basin assume contractors will perform all building maintenance and upkeep from the small day-to-day activities such as foundation and floor inspections and repairs, window replacements, large overhead door adjustments and repairs, HVAC repairs, electrical repairs, and plumbing repairs to major activities such as roof replacement and storm damage repair. As explained below in Section III.D.4.b.(3)(e), WFA/Basin, however, based its costs for building maintenance on the cost that BNSF currently incurs to pay contractors to perform major building repairs. That amount does not include day-to-day maintenance and upkeep that is performed by BNSF in-house B&B workers. WFA/Basin's assumption that a contractor will perform both major and day-to-day maintenance for the same price that BNSF pays for major repairs only is simply not realistic.

For bridges and culverts, WFA/Basin also assume that a contractor will perform maintenance and inspection work at a fraction of the cost BNSF currently incurs for these activities. WFA/Basin allocate $43,435 for bridge inspection and major repairs.[175] The contractor, together with the LRR's lone bridge inspector will conduct inspections every five years. WFA/Basin Opening Nar. at III-D-85 to 86. Rudimentary inspections of bridge decks and all spot maintenance, other than large repairs, will be performed by LRR's in-house MOW forces. WFA/Basin, however, provide no B&B employees to perform this work. *Id.* Thus, WFA/Basin expect that the track section crews, who are already fully occupied, will have the time and qualifications to perform bridge spot maintenance and inspections.

Like WFA/Basin, BNSF also contracts out large repair jobs on bridges, including steel and concrete repairs, and certain inspection activities, *i.e.*, inspection of footings and underwater substructures. All other inspection and spot maintenance activities are normally handled in-house by BNSF's B&B department staff. On the segments replicated by the LRR, BNSF employs 11 B&B workers to perform the day-to-day spot maintenance on bridges and buildings.[176] When BNSF's full bridge and culvert inspection and maintenance costs on the LRR route are properly accounted for, the cost is far higher than the amount budgeted by WFA/Basin.

WFA/Basin suggest that LRR's bridge repair costs will be low because the bridges will be new. WFA/Basin Opening Nar. at III-D-113. They assume $4,000 in major repair costs per major bridge every 5 years and capitalize these costs. However, WFA/Basin greatly underestimate the amount of repair work that will be required for LRR's bridges. The reality is that new bridges are not problem free. In fact, in Mr. Albin's experience as

[175] WFA/Basin Opening electronic workpaper "Spot Maint.xls."

[176] BNSF Reply electronic workpaper "BNSF Workforce Comparison.pdf."

head of BN's bridge department, new bridges frequently presented some of the biggest challenges and problems. Unexpected repairs are a fact of new bridge construction and WFA/Basin's claim otherwise is wishful thinking.

Moreover, WFA/Basin's treatment of these bridge repair costs as capital is wrong. BNSF capitalizes bridge maintenance costs that result in replacement or renewal of a major bridge component. The $4,000 WFA/Basin allots for bridge repair is by no means adequate to cover the cost of such a repair. Indeed, $4,000 might cover a minor concrete epoxy repair, re-seating a span, repair to a bridge seat, or the raising of a ballast curve or parapet. None of these repairs would be capitalized. In Mr. Albin's restatement of the LRR MOW plan, this type of work would be performed by the in-house B&B forces consistent with BNSF's current practice.

WFA/Basin's approach to communications maintenance is similarly flawed. They claim that signal maintainers will also perform most spot maintenance on LRR's signal system and that contractors will perform program maintenance and any spot maintenance that in-house forces are unable to perform.[177] However, WFA/Basin do not attempt to quantify the amount of spot maintenance the contractor would perform and budgets no costs to pay a contractor to perform such maintenance. Since WFA/Basin have not provided sufficient signal maintainers to maintain just the signals system, they would be unable to also maintain the communications system and therefore the contractor would be called upon to perform all spot maintenance on the communications system under WFA/Basin's plan.

[177] WFA/Basin Opening Nar. at 85 and 109; electronic workpaper Spot Maint.xls," worksheet "Contract Work."

A comparison of WFA/Basin's costs to maintain LRR's signals and communications systems demonstrates the inadequacy of WFA/Basin's plan. WFA/Basin's plan provide for just twenty-three MOW employees to maintain both systems for a total labor cost of nearly $2.4 million. They also include $177,000 to pay a contractor to perform capital MOW on the communications system for a total cost of $2.5 million. In the real world, BNSF employs 47 signals and communications employees to maintain these systems on the replicated lines. BNSF's total costs of maintaining the systems is nearly { } million [178] This does not even include the personnel/costs of maintaining the signals and communication systems at the dispatch center in Ft. Worth. WFA/Basin's assumption, that LRR can maintain these systems for more than $2 million a year less than BNSF actually incurs is totally unsupported and absurd.

Further, entrusting spot maintenance of communications systems to contractors is not sensible. Communication systems are part of the critical infrastructure of modern railroads. Since even small problems with the communication systems can lead to system-wide delays and outages, it is vital that problems be addressed quickly and effectively. Specially trained in-house crews can respond immediately and are fully equipped with the proper knowledge and training to assess and address it.

Contractors generally cannot provide the same responsiveness as in-house employees. Contract forces historically have a large turnover of employees, and therefore cannot guarantee that at any given time they will have workers familiar with the territory

---

[178] BNSF Reply electronic workpaper "Signal Comm Cost Comparison.pdf." Mr. Albin does not include vehicles and other equipment in this comparison. Since the quantity of vehicles and equipment is determined in part by the number of MOW workers and WFA/Basin have understated the ownership costs of the equipment they do provide, the disparity is even greater when these costs are considered.

and properly qualified for the tasks to be performed. Even when contractors retain long-term employees, because they must respond to the needs of several clients, contractors cannot guarantee that the same employees familiar with the railroad's territory, maintenance problems and maintenance procedures will be available at any given time. An inexperienced workforce significantly increases the risk of errors as well as the probability of injuries – areas of concern to railroads that are addressed most effectively through internal training and supervision.[179]

c. Use of Cross Trained Employees Cannot Justify WFA/Basin's Meager OE MOW Plan

WFA/Basin's limited use of cross-training does not support WFA/Basin's meager workforce assumptions. Unlike complainants in recent rate cases, WFA/Basin acknowledge that use of cross-trained employees is generally appropriate for only simple, rudimentary tasks. WFA/Basin Opening Nar. at III-D-80. Indeed, WFA/Basin identify only three instances in which LRR uses cross-trained employees: (1) track section crews are cross-trained so that each member of a crew can operate the various equipment, vehicles and tools used by the track crew; (2) track section crews are cross-trained to

[179] Railroad maintenance employees are generally required to have several years of education, training and even certification in their fields, as well as several years of experience. Training and staying qualified are on-going processes. An individual may have some knowledge in various areas, but it is rare to have persons who consistently maintain the required training and certifications for more than one field. Mr. Albin's workpapers include job descriptions for various positions similar to those proposed for LRR. The job descriptions show that the level of experience and training required for those positions cannot be filled by inexperienced contract workers. For example, by FRA regulations, a track inspector must have at least one year experience in railroad track inspection or a combination of experience in track inspections and training from a course in track inspection or from a college level educational program related to track inspection. Most Class I railroads on lines handling the tonnage of LRR require this as a minimum, with most of their inspectors having much more than one year's experience. *See* Section III.D.3.c. for training costs.

perform rudimentary bridge and culvert inspection and maintenance; and (3) signal maintainers are cross-trained to maintain LRR's communication system. However, the use of cross training in the first two instances does not differ substantially from BNSF's current practices, and the use of cross-trained signal/communication maintainers is unrealistic.

Since WFA/Basin's proposed use of cross trained track section crews is similar to BNSF's current practices, cross-training these employees would not result in a MOW workforce that is more productive than BNSF's current force. In the real-world, BNSF's individual track section crew members are able to operate most crew equipment, perform minor culvert maintenance, and assist on bridge repairs. In fact, WFA/Basin's track section crew staffing assumptions as to the number and location of such crews are consistent with BNSF standards and Mr. Albin's restatement of LRR's MOW plan. Moreover, WFA/Basin acknowledge that the rudimentary bridge inspections that LRR's track crews would perform could not replace inspections by B&B inspectors.

WFA/Basin's plan to use signal maintainers that are cross-trained to maintain LRR's communications system is totally flawed. As discussed in section III.D.4.b. above, WFA/Basin has not provided nearly enough people to maintain just the signals system. Those same people could not possibly shoulder the additional burden of maintaining the communications system.[180]

[180] A railroad might realize efficiencies from cross-training its MOW employees where those employees are often idle. However, where MOW employees are generally fully occupied, there are few, if any, benefits to cross training. In fact, there are significant costs associated with cross training, including higher recruitment, training, and compensation costs. WFA/Basin takes none of these additional costs into account.

Moreover, using cross-trained employees in this instance is not sensible and violates WFA/Basin's own standard that use of cross-training is appropriate for simple and rudimentary activities only. The skills and training required to maintain, inspect and test signals are substantially different in many respects than those needed to maintain, inspect, and test the communications system. The communication systems on a modern railroad are technologically sophisticated, complex systems that include radios, network data systems and microwave systems. Communications maintainers must be specially trained and have expertise in the systems that they maintain. WFA/Basin's assumption that signal maintainers can also perform maintenance on communication systems on LRR is not realistic.[181] In any event, the signal maintainers on WFA/Basin's LRR are stretched far too thin to perform work outside signal maintenance.

d. <u>WFA/Basin Understates the Daily OE Maintenance Required on LRR</u>

Some of the differences between WFA/Basin's OE MOW plan and the real-world results from WFA/Basin's underestimation of the amount of day-to-day spot MOW work and other duties, such as inspections, that must be performed on the LRR to maintain fluid operations. Although complainants acknowledge that LRR will carry "significantly higher tonnage than many short-lines and regional railroads" and that the "higher tonnage needs

[181] While WFA/Basin claim that WRPI supports use of combined signal/ communications employees here, too little information is known about WRPI to make a meaningful comparison to LRR. Mr. McDonald provides no information regarding the number of signals units on WRPI or the role of CNW in maintaining the communications system. Indeed, Messrs. Albin and Mueller recall that initially, WRPI had few sidings between Horsecreek and Shawnee and therefore had a very basic, minimal signal system. However, without information regarding WRPI's signals and communication systems and critical data, it cannot be assumed that what was appropriate for WRPI's unique circumstances would be appropriate for a stand-alone railroad like LRR.

to be reflected in both the maintenance programs and the LRR's field forces involved in routine maintenance" (WFA/Basin at III,-D-73) and generally do a more credible job than prior complainants in identifying tasks that in-house forces must perform, it is clear that WFA/Basin do not fully appreciate the magnitude of the maintenance needed to manage appropriately a heavy haul, high tonnage coal railroad. Their plan largely ignore the real-world evidence that the continuous movement of heavy loads at high speeds takes a toll on a railroad's physical plant through the myriad of relatively small localized infrastructure failures (*e.g.*, broken rail, surface and alignment defects) that require immediate response to keep the traffic flowing. Their plan also largely ignore the extraordinary and unplanned repairs that inevitably arise when the rail infrastructure is subjected to the continuous pounding of high tonnage, unit coal trains and the ravages of excessive temperatures, wind, rain, ice and other elements of nature.

WFA/Basin propose to maintain LRR's track to FRA Class IV minimum standards to permit the movement of loaded 286,000 GWR cars at 50 miles per hour. WFA/Basin Opening Nar. at III-D-72. Continuously cycling unit coal trains of up to 136 cars loaded to 286,000 pounds will subject LRR's track structure to tremendous pressures, requiring a far more extensive and sophisticated maintenance program than that proposed by WFA/Basin.

Industry publications have devoted volumes to discussion of the impact of increasingly heavy tonnages on the railroads' track structures, and the increased maintenance – both remedial and preventive – that has resulted from such loadings. As one article notes, the increases in heavy axle load traffic over the past years "have led many railroads, and especially track managers, to a growing interest in the area of track maintenance in relation to heavy-haul loads."[182] Heavy tonnage railroads became concerned with the ever increasing train lengths and tonnages as they observed, and were forced to react to, the increased stress and fatigue of track components caused by these loads.[183] After years of analyzing heavy axle load traffic, and implementing substantial improvements in maintenance methods and materials,[184] the railroads have concluded that, although preventive measures are of tremendous value, they do not eliminate the need for constant vigilance and frequent repair to the track structure. With the traffic levels assumed for LRR, it is important not only to maintain the railroad to the most up-to-date standards, but to explore additional testing to address new problems and challenges brought about by the increased loadings.

All of these factors result in frequent occurrences of unscheduled maintenance and the need for continuing repairs. WFA/Basin, however, fail to account for these heavy daily maintenance requirements in its MOW plan. An example of this is WFA/Basin's plan to maintain turnouts on LRR. Turnouts generally are the single highest cost item on a high tonnage coal railroad such as LRR. They require frequent welding, grinding, signal

---

[182] Jennifer Gruber, *Heavy Haul Loads Require Top-Notch Track Maintenance*, Rail Track & Structures, December 1998 at 21. BNSF Reply electronic workpaper "Heavy Haul Article.pdf."

[183] *Id.*

[184] BNSF upgraded its track standard to 136-pound rail and more recently has begun using 141-pound rail. It also began using concrete ties in heavy haul areas, in sharp curvature and heavy grade areas and in all heavy-haul new construction areas. Ballast specifications were upgraded to require exclusive use of granite or similar material as lesser materials repeatedly broke down under the load. Rail grinding frequencies and techniques were improved. Switch (turnout) maintenance, including programmed switch grinding, and materials were upgraded. Rail lubrication was upgraded and tie/rail fastening systems were tested and improved. Techniques and technology for testing rail for internal defects also have improved, and greater emphasis has been placed on strengthening and protecting the subgrade and sub-ballast.

maintenance, and adjustments. In BNSF's experience, problems with turnouts account for many of the unplanned outages. BNSF currently has two five-person night switch maintenance crews just on the Orin line whose job it is to pro-actively maintain turnouts.[185] This is in addition to signal maintainers and welders. Mr. Albin, in his restatement, estimates that LRR would require 24 signal maintainers and eight welders. WFA/Basin, however, provides just 18 signal maintainers who are also responsible for maintaining the communications system and six welders. WFA/Basin's highly aggressive workforce assumptions are seriously flawed and would result in deferred maintenance, leading to more frequent outages than BNSF currently incurs on the replicated lines.

Unplanned occurrences or random failures have a substantial impact on the railroad's operations. If the railroad's MOW plan does not take these events into account, the railroad will not be able to meet its operating requirements. BNSF maintains records of random failures. BNSF's Random Failures Reports record the "trouble tickets" that identify the daily instances of unplanned occurrences on BNSF lines that result in track outages or operating speed restrictions, and thus disruption to traffic flows. These are *in addition* to other operating or mechanical failures that result in additional disruptions. This Report includes only those failures that the Signal Desk in BNSF's Network Operations Center records as a result of track/signal failures, *i.e.,* broken rail, signal failure, and hot bearing detector alarms. It does not include train delays due to faulty rear-end devices, locomotive failures, cars requiring set out, or other mechanical failures. Similarly, it may not include some of the failures caused by events such as embankment failures, plugged culverts, low bridge end, switch maintenance (points not matching, frog

[185] BNSF Reply electronic workpaper "Night Switch Crew.pdf."

low), and reported tight rail during hot weather. Furthermore, the duration of the failures in the Random Failures Report does not include all of the time necessary to permanently correct the failure. For example, in the case of a broken rail, the time recorded in the Random Failures Report includes from when the failure is first discovered, whether by a signal indication or an inspection in the field, to when the rail is temporarily repaired by being angle barred and trains begin running again. It does not include the subsequent track time to make permanent repairs, *i.e.*, removing the angle bars and welding the rail joints, grinding the rail to match, and tamping the area of the joint to allow trains to proceed at track speed.

On BNSF's line segments replicated by LRR, there were more than 1,400 random failure occurrences in 2004, with an average duration of approximately 2.5 hours per outage. The table below shows the occurrences by subdivisions for line segments replicated by LRR.

Table III.D.4-2
Summary Of Random Failure Occurrences
On LRR Line Segments (2004)

Subdivision	Route Miles	Track Miles	Total Number of Occurrences (2004)	Average Duration (Hours)
Orin	128	304	1224	2.5
Canyon	42	56	173	2.6
Front Range (MP 220-241)	21	23	4	5.8
TOTAL	**191**	**383**	**1401**	

Source: BNSF Reply electronic workpaper "BNSF Random Failures.pdf."

Since WFA/Basin's proposed tonnages on LRR are less than the combined UP/BNSF tonnage on the Joint Line portion of the Orin Subdivision, Mr. Albin also examined BNSF's random failure occurrences on BNSF's line from Donkey Creek to Edgemont, Alliance and Northport as tonnages on these subdivisions are comparable to average tonnage on LRR. The number and duration of the incidents on these lines are indicative of what LRR can expect.

Table III.D.4-3
Summary Of Random Failure Occurrences
On Donkey Creek to Northport Line Segments (2002)

Subdivision	**Route Miles**	**Track Miles**	**Total Number of Occurrences (2002)**	**Average Duration (Hours)**
Angora	34	34	439	2.1
Black Hills	111	221	740	2.7
Butte	112	242	652	2.1
TOTAL	**256**	**496**	**1831**	

Source: BNSF Reply electronic workpaper "BNSF Random Failures 2002.xls."

When an undesired restricted signal indication is displayed in the field and/or on the dispatcher's board, for safety reasons a train must stop and wait at that location for authority from the train dispatcher before proceeding at restricted speed.[186] In addition to providing for the efficient movement of trains, signal systems also monitor track integrity and an undesired, restricted signal indicates that there is a problem either with the signals system or the track structure. The problem could be as minor as a burned out signal bulb or as significant as a broken rail, track obstruction, water over the rail, or a major washout. Even relatively minor problems that could be easily corrected by a quick response from the MOW forces when first identified would cause significant traffic disruption and a rapid deterioration of the track if unheeded, leading to more track outages or even train derailments.

[186] In most cases, the train is not stopped for the duration of the failure. Once it is determined by the dispatcher that there are no opposing train movements, the dispatcher may authorize the train to proceed at restricted speed, *i.e.*, a speed which will allow it to stop within one-half the range of vision, not exceeding 20 MPH. The train then proceeds at restricted speed until it passes a more favorable signal at which time it may proceed at normal speed. All trains moving past this unwanted restricted signal are governed by these same rules until the problem is corrected and the governing signals allow for normal movement.

An effective and efficient MOW plan must include adequate staff and equipment properly positioned to handle these problems expeditiously and with as little disruption to traffic as possible. For example, the highly traveled lines on the BNSF Orin Subdivision experienced an average of 3.14 unplanned failures per day in 2004, with an average duration of 2.5 hours per outage. Given the amount of traffic on these lines, it would be foolish not to have sufficient resources located in the immediate vicinity to handle these emergencies and keep the trains running fluidly.

Attending to these random failures is in addition to the internal staff's regular duties performing the FRA required inspections and the routine daily repairs that also must be performed diligently. The routine inspections and repairs cover hundreds of activities, including routine inspection of track, bridges, culverts, and other structures on the railroad; routine repairs to broken or defective rail, ties, or other track materials found during inspection; routine servicing of switch machines, wayside signals, crossing signals, and rail lubricators to keep them in good operating condition; snow and ice removal from switch points and other critical areas; maintenance rail grinding; restoring track to proper geometry through spot lining and surfacing; repairing short areas of fouled ballast; replacement of cross ties and switch ties that have failed in pockets and thus fail to meet FRA standards; gauging track that may be in violation of FRA standards due to broken spikes or deteriorated ties; repairing or replacing damaged or missing right-of-way items such as fences and signs; maintaining mechanical facilities, particularly the fueling facilities; compliance with environmental laws regarding disposal of materials and operation of sewer plants and fueling facilities; controlling vegetation between chemical spraying activities; repairing properties and facilities damaged by floods or snow;

maintaining lighting in yards; maintaining buildings and grounds; and countless other tasks that arise on this high-density, high-tonnage rail system. WFA/Basin's maintenance plan as set out in their evidence fails to recognize the magnitude and importance of these tasks.

WFA/Basin's treatment of MOW expenditures assumes that their railroad would not experience the track degrading impacts of heavily-loaded trains or adverse geological and weather conditions that affect real-world railroads. Even assuming that the LRR was constructed using the best available construction materials and technologies, it can still expect to incur substantial unplanned day-to-day maintenance needs. In Mr. Albin's experience with the construction and maintenance of new track on high tonnage railroads, no track is immune from random failures. In any event, while the LRR lines would be new at the beginning of LRR operations, they would soon experience the effect of heavy-haul operations that require close and constant MOW attention. For example, as explained above, a large number of the random failures that BNSF currently experiences are related to turnout malfunctions. These structures are subject to extreme tonnage and heavy axle loads that quickly take their toll on the turnouts. As a result, turnouts, regardless of age, require frequent attention including switch point and signal circuit contact adjustments.

Moreover, there is no reason to believe that LRR would experience fewer maintenance problems than BNSF currently experiences on the lines replicated by LRR. In the past several years, BNSF has invested billions in upgrading aging track facilities and building additional track on the LRR route. As a result, BNSF's track facilities are state-of-the-art. Yet, as Table III.D.4-2 shows, BNSF experiences hundreds of failures on these lines annually as a result of, among other things, the constant pounding of heavy axle loads continuously cycling on these lines.

There area also specific challenges posed by the geographic characteristics of the LRR route that WFA/Basin do not even attempt to address. These include:

- protecting against erosion or steep cuts west of Guernsey and at Wendover Canyon;
- maintaining tunnels;
- addressing ballast fouling and embankment problems caused from coal dust blown from cars on the Orin Subdivision;

e. <u>WFA/Basin Inadequately Equips LRR's MOW Forces and Understate Equipment Costs</u>

WFA/Basin has not adequately equipped its MOW forces and, in several instances, substantially underestimates the ownership cost of such equipment. An efficient and effective workforce *must* be properly equipped. For a high tonnage railroad such as LRR, necessary equipment includes modern track and structure maintenance equipment (*e.g.*, switch/spot tampers, speed swings, regulators, etc.). There must also be sufficient equipment so that crews and equipment are in close proximity to their territories, and to each other, to be able to respond immediately to problems with track or other structures assigned to them. Mr. Albin knows from his own experience that the only way modern heavy tonnage railroads have been able to *reduce* forces efficiently (a feat that WFA/Basin accomplishes with the mere stroke of pen) is through the use of *more* equipment, such as tampers, regulators, speed swings, and other state-of-the-art equipment capable of working efficiently within short track windows and between trains, and through better trained and experienced employees.

WFA/Basin's equipment assumptions are inadequate to allow its track crews to perform critical tasks efficiently such as addressing drainage problems. Drainage problems arise on a daily basis and must be addressed immediately. If not addressed immediately, drainage problems lead to soft subgrade and to slow orders. A properly equipped track department should include an adequate number of motor graders,[187] trenchers, cranes,[188] dozers,[189] front end loaders,[190] and Jordan spreaders so that drainage problems and other critical activities can be performed quickly and efficiently. Yet, WFA/Basin equips its track department with just one gradall-hirail (motor grader) and two backhoes.

Rail and tie replacement is also a daily activity on a high tonnage railroad such as LRR. Every track crew needs to be equipped with the proper equipment to perform these activities. One piece of equipment critical to efficient performance of these activities is

---

[187] A motor grader is a diesel-powered, rubber-tired machine equipped with a blade under the machine, used mainly for leveling/smoothing of roads or track grades in preparation for laying track or road work. A motor grader is also used for improving drainage by leveling ditches to drain.

[188] Cranes can be diesel or electric/locomotive. Cranes are rail-mounted and powered by tractor motors and are used mainly for handling heavier loads (40 to 60 ton), such as bridge girders and pilings, entire panelized turnouts and track panels. Cranes are also capable, when equipped with a draw bar, to handle two or three rail cars with maintenance material (rail, ties, etc.) or ballast for loading or unloading.

[189] Dozers are diesel-powered machines with a large blade on the front of the machine, and is mainly used for moving large quantities of earth. Dozers are used for plowing fire guards, improving drainage, building grade on roads, cleaning ditches, and moving cars or other equipment in a derailment.

[190] Front end loaders are diesel-powered, rubber-tired machines and are usually equipped with a bucket for picking up loose dirt, track or bridge material and moving it to a new location or loading it into rail cars or trucks. Front end loaders can also be used for improving drainage, building roads or railway embankment.

the speed swing.[191] Real-world MOW track crews also typically utilize speed swings on a daily basis, as they allow crews to move heavy materials and equipment quickly. Speed swings are particularly adept at handling welded rail. Although WFA/Basin acknowledges that this equipment is "invaluable," they provide just two speed swings for the LRR which is plainly inadequate. Each track crew should be equipped with a speed swing so that failed rail and ties discovered on daily inspections can be quickly replaced.

Moreover, WFA/Basin dramatically understate the ownership costs of the equipment it claims LRR will need including the following:

- WFA/Basin assume a cost of just $70,000 for a speed swing. BNSF's actual cost for a speed swing in 2004 was { }.[192]
- WFA/Basin assume a cost of just $606 for air compressors. This might be an amount sufficient to purchase a compressor at a local hardware store that is suitable for home improvement projects, but would not be suitable for heavy-duty, industrial applications such as railroad maintenance. BNSF's actual cost in 2004 for an industrial grade air compressor was { }[193]
- WFA/Basin assume a cost of just $1,200 for a hydraulic rail puller. BNSF's actual cost for a rail puller in 2004 was { }[194]
- WFA/Basin assume a cost of just $900 for a 400 AMP welder. BNSF paid { } for a 400 AMP welder in 2003.[195]

---

[191] A speed swing is a diesel-powered, rubber-tired machine with a hi-rail attachment used mainly as an essential machine for handling and setting/threading continuous welded rail in and out of track for relay or replacement projects. A speed swing is also capable, when equipped, for use on numerous other track maintenance projects, such as handling other material, *i.e.*, spike kegs, short pieces of rail, turnout material (switch point), frogs, and stock rail.

[192] BNSF Reply electronic workpaper "BNSF Equipment Inventory.pdf."

[193] *Id.*

[194] *Id.*

[195] *Id.*

Lastly, WFA/Basin assume an arbitrary and unsupported five-year life for all LRR's MOW equipment.

f. WFA/Basin's Equipment Maintenance and Operating Budget Accounts for a Large Portion of the Differences Between Complainants' Plan and the Real-World Costs

A large factor contributing to WFA/Basin's understatement of MOW costs is WFA/Basin's paltry budget for equipment maintenance and operating costs. Proper maintenance of equipment is critical. Obviously, equipment that doesn't work properly is useless and will delay the MOW forces ability to perform repairs and maintenance quickly and efficiently, so as not too interfere with the smooth operations of LRR. Many pieces of equipment are used daily to perform heavy duty chores, take a daily pounding and require frequent maintenance to keep them in peak operating condition. Yet, WFA/Basin budget just $234,250.25 for equipment maintenance based on an unsupported and arbitrary 5 percent of annual ownership costs.[196] The arbitrary amount allotted by WFA/Basin to equipment maintenance is patently inadequate to maintain and operate LRR's MOW equipment. BN performed a special study of equipment maintenance and operating costs. That study captured costs necessary to maintain and operate the equipment, including consumables such as fuel, oil, blades, and drill bits and outside labor costs for service and repair.[197] The study demonstrates that MOW equipment maintenance and operating costs are substantially higher than the 5 percent of initial equipment costs that WFA/Basin budgets for LRR.

[196] WFA/Basin Opening electronic workpaper "Spot Maint.xls," worksheet "Contract Work."

[197] BNSF Reply electronic workpaper "MOW Equipment Costs.pdf."

g. WFA/Basin Makes an Improper Reduction to LRR's OE MOW Costs

WFA/Basin took the total maintenance costs and reduced them even further by the ratio of 2004 GTMs to 2024 GTMs.[198] WFA/Basin fail to explain why they assume that LRR's personnel count for 2004 would be reduced from 2024 levels proportionately with the difference in GTMs between those two periods. This unexplained and unsupported indexing proposal is inconsistent with past Board precedent and, more importantly, yields nonsensical results. Basically, WFA/Basin are suggesting that they developed all of their maintenance-of-way staffing levels and contractor costs based on their forecast of LRR traffic 20-year hence and, as a result, they are entitled to reduce those costs based on the ratio of forecasted 2004 LRR volumes to forecasted 2024 traffic levels. The result is a more than six percent reduction from WFA/Basin's already low maintenance-of-way estimates.

In prior stand-alone cost proceedings, the parties developed an estimate of the normalized or average annual maintenance of the SARR of the 20-year DCF period. Under this approach, staffing levels for maintenance-of-way headquarters personnel and operating expense related field personnel requirements at the start of operations were developed and conservatively assumed to remain constant throughout the DCF period. Capital related expenditures were calculated based on the average densities projected for the SARR over the same 20 years. This normalized cost was dropped into the Board's DCF model and adjusted only for anticipated inflation.

---

198 WFA/Basin Opening electronic workpaper workpaper "Spot Maint.xls," worksheet "Spot Maintenance Summary."

In this case, WFA/Basin have not done anything methodologically different in developing staffing levels for the maintenance-of-way headquarters and field personnel, but they compute their normalized capital related expenditures not on the average density levels over the 20-year DCF period but rather on the last year (2024) projected traffic levels. Presumably, it is WFA/Basin's perception that its use of 2024 traffic levels for computing the stand-alone capital related expenditures serves as justification for indexing both capital and operating expenditures back to year 2004 levels. However, because the operating expenditures are not computed based on specific assumptions of density -- and indeed, as WFA/Basin argue, such expenditures do not vary directly with density[199] -- reducing operating expenses by the ratio of 2004 density to 2024 density is wrong and is nothing but a thinly veiled attempt by WFA/Basin to artificially reduce maintenance-of-way expenses.

Taken literally, the impact of WFA/Basin's proposed reductions are untenable. For example, for the first year of operations, the LRR will be staffed by 0.93 of a Chief Engineer. Similarly, the day one equivalent of WFA/Basin's proposed four person field track section crew is 3.73 people and those crews will operate fractions of different pieces of equipment. WFA/Basin's proposal is equally nonsensical for contract maintenance expenses where WFA/Basin is implicitly assuming snow removal and weed spraying costs will be lower in the first year because traffic levels are assumed to be lower than in year 20 of the DCF period. WFA/Basin's adjustment should be rejected.

[199] WFA/Basin Opening Nar. at III-D-92.

h. WFA/Basin's Treatment of Rail Grinding and OE Equipment Ownership Costs Departs from Board Precedent

WFA/Basin depart from Board precedent by capitalizing OE maintenance rail grinding costs and equipment ownership. In prior cases, these costs have been treated as OE costs and included in the DCF as such.[200] In this case, WFA/Basin claim that since, railroads generally capitalize these costs it is appropriate to capitalize these costs for purposes of the SAC test. WFA/Basin Opening Nar. at III-D-73 and 118. For rail grinding, WFA/Basin calculate a present value of rail grinding cost for LRR over the 20-year DCF and include that cost in the stand-alone's investment to be recovered. WFA/Basin include equipment ownership costs as construction costs in the DCF. Conceptually, BNSF does not object to the approach WFA/Basin has taken since the outcome should be the same so long as the costs are calculated correctly and properly captured in the DCF, which WFA/Basin have not done.

In this reply, BNSF accepts WFA/Basin's general approach of including the present value of rail grinding costs in LRR's investment to be recovered but rejects their calculation of LRR's rail grinding costs and corrects an error in their methodology for calculating present value. Mr. Albin explains in section III.D.4.i.(3) why WFA/Basin's actual rail grinding unit costs and grinding frequency are erroneous and thus substantially understate costs. In their present value calculations, WFA/Basin further understate rail grinding costs by failing to index those costs for inflation before discounting them to present day value. WFA/Basin calculate LRR's annual rail grinding cost using 2004 unit costs of $228,320 -- which already is massively understated -- and assume that LRR will

---

[200] *E.g. Xcel* at 78.

incur the same cost ($228,320) in every year of the DCF period. They then discount these costs to present day value and include them as investment costs in the DCF. The problem with WFA/Basin's approach is that these costs will be subject to inflation in future years. Failing to adjust for inflation produces an unrealistic present value.

In his restatement, Mr. Albin developed a realistic annual rail grinding cost for LRR based on the average tonnage of the base year and peak years tons and BNSF's actual unit costs. BNSF witness Cassie Gouger then used the RCAF-U inflation indexes for years 2005 to 2024 to determine rail grinding costs in each of those years. Lastly, she discounted those costs to present value and includes the present value cost in the investment to be recovered by the SARR.

BNSF rejects WFA/Basin's treatment of equipment ownership costs. As discussed in section III.D.4.e. above, WFA/Basin's equipment ownership costs are understated and unsupported. In addition, in calculating the annual ownership costs within the DCF, they also assume an arbitrary and unsupported five-year equipment life. Because WFA/Basin's newly proposed treatment of MOW equipment is both arbitrary and unsupported, BNSF rejects the approach and instead develops MOW equipment costs using the same approach that has been accepted by the Board in recent SAC decisions.[201] Specifically, BNSF develops MOW equipment ownership costs using the ownership costs that were included in the special study of equipment operating and maintenance costs that Mr. Albin uses to develop equipment operating and maintenance costs for LRR.

---

[201] *See TMPA, Xcel.*

i. In Contrast To WFA/Basin's Plan, Mr. Albin Has Developed a Realistic OE MOW Plan

Mr. Albin's estimate of LRR's maintenance-of-way costs is based on a real-world view of the maintenance needs of a high tonnage railroad that is consistent with railroad practices. Mr. Albin built from the bottom up the equivalent of a real-world OE maintenance-of-way staff that would be needed on LRR. Based on his experience, interviews with BNSF Assistant Vice President Engineering Services, BNSF Division Engineers and Roadmasters, and headquarters staff, observation of the lines to be replicated, and his review of records of recently needed maintenance on these lines, Mr. Albin identified the projects and problem areas that would be replicated on LRR and assigned work crews and dollars accordingly. The projects and workforce are based, to some extent, on BNSF's current MOW staffing for these lines, but they do not simply replicate BNSF's organization. They are tailored to the proposed LRR tonnages, train densities, plant size and facilities, weather conditions, and other unique situations on the LRR route to provide as lean a maintenance team as possible and still cover all the required maintenance activities. Mr. Albin's estimate of the number of people needed is based on existing positions tailored to LRR's needs and the BNSF's production rates for the completion of tasks based on the size of the task and the crew.

In many areas Mr. Albin relies on BNSF standards and MOW practices to develop the MOW plan for the LRR. BNSF's MOW practices are considered the best in the industry. Over the past twenty years, BNSF has realized substantial productivity gains in MOW.[202] As a result, BNSF has the least cost, most efficient MOW dynamics of all Class

[202] BNSF Reply electronic workpaper "BNSF MOW Productivity Data.pdf."

I's and many international heavy-haul, high-tonnage railways. Its MOW employees per route mile are lower than all other Class I railroads. Its grinding practices have enabled it to extend rail life far beyond expectations. Frequent inspections and testing ensure that problems are caught early. Use of specialized and experienced MOW forces ensure that repairs are done right.[203] Accordingly, reference to BNSF's standards is consistent with the SAC concept that the SARR should be the least cost, most efficient railroad.

After restating the MOW plan from the ground up, Mr. Albin then compared his restatement to WFA/Basin's plan. Where there were only small differences between the two MOW plans, Mr. Albin generally accepted WFA/Basin's assumptions.

Mr. Albin's MOW OE budget is discussed under the following headings: (1) LRR OE Personnel Requirements and Compensation; (2) LRR OE Track Maintenance Equipment; and (3) LRR OE Contract Work.

(1) LRR OE Personnel Requirements And Compensation

(a) Personnel Requirements

i) Systems Engineering General Office Requirements

WFA/Basin's MOW plan includes a combined Mechanical and Systems Engineering Office based at Guernsey. This office is headed up by LRR's Chief Engineer and includes a staff of 17 (including three inspectors). The System's Engineering Office directs the in-house field staff and deals with the outside contractors. Mr. Albin generally

[203] While WFA/Basin claims that BNSF's use of specialized forces is a result of restrictive labor agreements, the fact is that specialized forces are generally the most efficient for high tonnage railways. Further, as discussed below, there are some activities where use of specialized forces are not the best approach for a railroad the size of LRR. In restating LRR's MOW workforce, Mr. Albin takes into account LRR's specific needs.

agrees with WFA/Basin's Systems Engineering General Office personnel assumptions with the exception of the three inspectors (one signal and two B&B) that WFA/Basin assigned to that office. These positions spend most of their time in the field and are more properly classified as field employees.[204]

ii) Departmental Maintenance-Of-Way Field Staff

WFA/Basin appear to have organized their OE MOW field forces along departmental lines roughly according to craft. They have divided their field staff into three departments; track (51), signals and communications (19), and B&B (1). Mr. Albin agrees with a departmental approach, which is consistent with BNSF's practice and the practice of other Class I railroads. However, Mr. Albin disagrees with WFA/Basin's combination of the signals and communications departments into a single department. He also disagrees with the number of personnel that WFA/Basin include in each department.

In his restatement of LRR's MOW plan, Mr. Albin includes a signals department and a communications department consistent with BNSF's organization and that of other Class I railroads. He also adds a purchasing and stores department. His restatement includes several key positions that, as Mr. Albin explains below, are necessary to maintain LRR adequately, but which WFA/Basin omitted from their plan. In some instances, Mr. Albin restatement excludes positions which WFA/Basin included in their plan, such as the Assistant Managers of Track Maintenance. The table below summarizes the departmental organization and staffs in Mr. Albin's restatement of LRR's personnel requirements.

---

[204] WFA/Basin's includes these three inspectors as main office personnel and provides office supplies but no small tools and materials. In addition to office supplies, however, inspectors require small tools and materials to perform their jobs.

Table III.D.4-4
Mr. Albin's Restatement of LRR Personnel Requirements
Organized Along Departmental Lines

Department	Management/Supervisors	Field Workers
Track Department	2	49 + 10 (seasonal)
Bridge & Building (B&B)	1	7
Signals Department	3	33
Communications Department	1	10
Electrical Department	-*	2
Purchasing/Stores MOW Personnel	0	3
Sub-Total	**7**	**114**
Total	**121**	

*B&B Supervisor also supervises electrical workers.
Source: BNSF Reply Exhibit III.D.4-1, Maintenance of Way Organization and BNSF Reply electronic workpaper "LRR Personnel.pdf."

In addition to the seven supervisors and 104 full-time MOW field workers, ten seasonal track employees work approximately nine months of the year performing work best done in good weather. Thus, Mr. Albin concluded that the total MOW OE workforce required to maintain LRR to the appropriate safety and operating standards is 114, including the ten seasonal track employees and the three Purchasing and Store Department MOW personnel.

Each department is discussed below.

a. Track Maintenance Personnel

WFA/Basin's Track Department is overseen in the field by two Managers of Track Maintenance and two Assistant Managers of Track Maintenance WFA/Basin also include five three-person track section crews, three two-person welding gangs, seven machine operators, two two-person spot surfacing crews, a two-person ditching crew, four track inspectors, two lubricators, and two work equipment mechanics, for a total of 51 track department field employees.

Mr. Albin identified three flaws in WFA/Basin's Track Department. First, it lacks key positions such as a night response crew and district gangs. As explained below, LRR operates 24 hours-a-day and outages can occur anytime, day or night. When they occur a rapid response is necessary in order to keep LRR operating smoothly. LRR's track section crews, however, cannot be expected to put in a full day's work and then respond to outages at night on a regular basis. A night response crew is necessary to respond to nighttime maintenance needs. This crew will also perform preventative maintenance on turnouts. This work is best performed at night when the lines are generally less congested. District gangs are required in order to handle high priority and larger projects that section crews are unable to perform.

Second, WFA/Basin's proposed track department for LRR is short-staffed in key positions. Specifically, WFA/Basin provide too few track inspectors, welder/grinders, and machine operators/truck drivers. Failure to provide adequate personnel in these positions will result in failures to detect and correct track defects before they cause slow orders and outages.

Lastly, WFA/Basin include certain positions that are too specialized for LRR's needs and would not be as productive as BNSF's forces today. Generally, use of specialized forces is the most efficient approach on a heavy-haul, high-tonnage railroad. However, this is not always the case. WFA/Basin's two-person ditching crew, two two-person surfacing crews, and two lubricators would not be efficiently used on LRR. WFA/Basin is correct that LRR will require a considerable amount of spot surfacing and ditching, as well as lubrication. However, on LRR this work can be performed more efficiently by district gangs and by seasonal workers. Indeed, much of the ditching and spot surfacing work, as well as drainage work, fire guard maintenance, rail adjustment and spot ballast cleaning is best performed in the good weather months. Use of seasonal gangs to perform these tasks is clearly more efficient than WFA/Basin's use of specialized personnel employed year-round.

In his restatement, Mr. Albin has revamped LRR's Track Department to address adequately LRR's daily track maintenance requirements with the least number of people possible. Mr. Albin's restatement,

- replaces WFA/Basin's two Managers of Track Maintenance and two Assistant Managers of Track Maintenance with two managers, reducing the number of field managers from four to two;
- eliminates WFA/Basin's surfacing, ditching, and lubricator positions, eight positions in all, and replaces them with a more efficient and versatile combination of two three-person district gangs and ten seasonal workers;
- adds four track inspectors;
- adds a fourth two-person welding crew;
- adds three machine operator/truck drivers.

The Table below sets out Mr. Albin's restated Track Department field personnel requirements. Each position is discussed below.

Table III.D.4-5
Track Department Field Maintenance Force

Major Headquarters Location	Track Section Crew (Foremen/ Laborers)	District Gang	Grinders/ Welders	Track Inspectors	Work Equipment Mechanics
Donkey Creek	4	3	2	4	-
S. Logan	4	-	-	-	-
Reno	4	-	2	-	-
Guernsey	4	3	2	4	2
Bridger Jct.	4	-	2	-	-
Sub Totals	**20**	**6**	**8**	**8**	**2**
Grand Totals	**44(+10 seasonal+ 5 night response crew)**				

Source: BNSF Reply Exhibit III.D.4-1, Maintenance of Way Organization and BNSF Reply electronic workpaper "LRR Personnel.pdf."

Roadmasters (Managers Track Maintenance). Mr. Albin's restatement includes two Roadmasters, to oversee LRR's field MOW track department forces. The Roadmaster position is similar to WFA/Basin's Manager of Track Maintenance position. Mr. Albin uses the term Roadmaster because that is the term used by BNSF and the Board in prior rate cases for this position. The Roadmasters are based at Donkey Creek and Guernsey and each is responsible for all track maintenance within his or her territory, including planning, employee training, coordination with other internal departments, and interaction with outside agencies. Each Roadmaster oversees track section crews, district gangs, welding/grinder crews, track patrol gangs and seasonal crews.

Section Crews. Mr. Albin generally agrees with WFA/Basin's track crew section assumptions. In Mr. Albin's restatement, the Roadmaster at Donkey Creek oversees two section crews; and the Roadmaster at Guernsey oversees three section crews. Section crews consist of a track foreman, machine operator, laborer and truck driver.

District Gangs. Mr. Albin includes two three-person district gangs to respond to major derailments, washouts, and other larger track problems and priority maintenance projects that track section crews that are not capable of handling, such as surfacing and drainage work. The gangs are based at Guernsey and Donkey Creek and are on call 24 hours-a-day, seven days-a-week.

Welder/Grinder Crews. WFA/Basin included three two-person welder grinder crews. This is simply inadequate to maintain LRR. Welder/grinder crews are a critical component of LRR's MOW needs. They are responsible for maintaining the condition of all frogs and switch points on the specified territory, and keeping the territory free of rail joints. On a high tonnage railroad, joints on welded rail cannot be tolerated because they become battered and chipped and result in broken rail. Therefore, where joints are created as a result of repairs to defective rail found by the detector cars,[205] welders must follow up immediately to weld all rail joints, if possible, within 24 hours of the occurrence on high tonnage lines and as quickly as possible on other lines in order to avoid battered joints. Welding crews also provide the equipment to grind switches, frogs and crossings. Mr. Albin concludes based on BNSF's welding gang production rates, and the size, tonnage, and speed of LRR, that a fourth two-person crew is necessary to address adequately LRR's MOW needs. Each crew consists of a welder and a welder's helper.

Machine Operators/Truck Drivers. Machine Operators are part of the section crews and the 10-man seasonal gangs. Machine Operators operate front-end loaders, dozers, tractors, and speed swings, which are needed for day-to-day activities and to keep the territory clean of scrap rail and used ties and to maintain drainage and roadways. They also operate spot tampers, switch tampers, regulators, brooms, weed mowers, and cranes that are needed seasonally. All truck drivers who operate larger over-the-road vehicles must possess DOT and CDL licenses, which requires LRR to provide regular training and testing and ensure the proper renewal of licenses. Based on BNSF production rates, and the size, tonnage, and speed of LRR, Mr. Albin concluded that a total of ten machine operators/truck drivers are necessary to maintain LRR's track system.

Work Equipment Mechanics. Mr. Albin agrees with WFA/Basin that LRR requires two work equipment mechanics. These work equipment mechanics perform light maintenance on equipment such as lubrication and oil changes, light repairs and checks to

---

[205] Detector cars frequent the high tonnage portions of the railroad on a monthly basis.

ensure equipment is operating efficiently. Major repairs and overhauls are performed by a third-party.

Seasonal Gang. Seasonal gangs perform work that is best performed in good weather months. This work includes improving drainages, spot tamping, plowing maintenance roads on the right-of-way to allow access to the track, maintaining fire guards, and other special projects.

a) Bridge/Building Maintenance Personnel

WFA/Basin assume that all program and some of the spot maintenance on bridges will be handled by contractors. WFA/Basin Opening Nar. III-D-85. WFA/Basin provided two bridge and culvert inspectors and assume that the track section crews will also perform rudimentary bridge inspections and handle simple spot maintenance tasks. *Id.* at 72, 85. Other than the two bridge inspectors, WFA/Basin included no in-house B&B personnel to perform this bridge maintenance. WFA/Basin's bridge inspection and maintenance plan is based on the unrealistic premise that LRR's field crews will have both the time and the training to perform maintenance on the 100 bridges on LRR, all the while tending to their myriad other duties. Indeed, responding to the inevitable daily random failures alone will consume most of these crews' time, leaving little time to perform their other duties. As a result, bridge inspection and repair on LRR likely will be spotty at best, creating an unacceptable risk of slow orders, track outages, derailment, and non-compliance with FRA regulations.[206]

---

[206] WFA/Basin states on page III-D-109 that "major bridge structures would ...be inspected every five years on a rolling schedule." This is *not* the policy of BNSF for heavy tonnage track, such as the LRR route. Thorough inspection of all bridges are performed every year with interim inspections occurring on some bridges as needed.

As to building maintenance, WFA/Basin assume that most of the spot maintenance work necessary to maintain its fueling facilities, locomotive repair shop, car shop, dispatch center at Guernsey, and other buildings on LRR will be contracted out. WFA/Basin at III-D-110. WFA/Basin provide just one B&B employee, a Water Plan and Fueling System Technician to "oversee the operation of the fueling facilities and water system/pollution abatement plan at the Guernsey Yard." *Id.* at III-D-88.

Reliance on outside contractors to perform needed maintenance and upkeep of all facilities on LRR is not realistic. Repairs and adjustments to facilities and equipment at the fueling facilities, locomotive repair shop, car shop, dispatch center and other facilities must be made immediately so as not to delay or back-up traffic on LRR. Waiting for a contractor to respond is often out of the question.

Moreover, as explained in III.D.4.b, WFA/Basin have not budgeted sufficient resources to pay an outside contractor to perform the spot maintenance and general upkeep on LRR's buildings and facilities.

In his restatement of B&B personnel, Mr. Albin locates a B&B supervisor at Guernsey, where the major structures are located, including the locomotive repair and maintenance facility, fueling facilities, and headquarters office buildings. He also locates at Guernsey a B&B crew consisting of a foreman, three carpenter/helpers, and one machine operator/truck driver; an inspector and water service mechanic is also based at Guernsey. The B&B crew located at Guernsey also includes an inspector and a water service mechanic. The B&B crew is equipped with boom trucks, chase vehicles, and hydraulic tools. The total full-time B&B workforce includes a Supervisor and seven field personnel as set forth in Table III.D.4-6.

Table III.D.4-6
B&B Department Maintenance Forces

Location	Foreman	Inspector	Carpenter Helper	Water Service	Machine Operator/ Truck Driver
Guernsey	1	1	3	1	1
Grand Total = 7					

Source: BNSF Reply Exhibit III.D.4-1, Maintenance of Way Organization and BNSF Reply electronic workpaper "LRR Personnel.pdf."

Each position in the B&B Department is addressed below.

Supervisor Bridges and Buildings. The Supervisor of Bridges and Buildings directly supervises all B&B operating maintenance crews; the yearly bridge rebuilding, and scheduled maintenance programs. This position also directly supervises the electrical department and maintenance work on buildings, facilities and other related structures, *i.e.*, fueling, locomotive and car shops. This position is responsible for bridge and building inspections; the review and prioritization of both operating and capital work for presentation to the B&B Engineer for funding; implementing the safety program for the department; coordinating B&B and Electrical work with other departments, *i.e.*, track, signal, and communications. The supervisor inspects and dispatches B&B forces to unplanned outages and emergencies involving railroad structures such as bridge and culvert wash-outs and damage to structures from derailments, structures hit by high, wide loads, etc.[207]

Bridge Inspector. The Bridge Inspector is responsible for inspecting all bridges and large culverts and making instant repairs or calling in bridge crews as needed to address problems identified on inspection. (The track department will inspect and

[207] Mr. Albin assigned 66 percent of the B&B supervisors' time to OE. BNSF Reply Exhibit III.D.4-1.

maintain culverts with less than 36" diameters.) The carpenters and helpers handle the larger repair jobs identified by the inspector.

Coordination between bridge maintenance crews and track department inspectors is essential as many maintenance tasks, such as raising bridge ends, aligning track on bridges, and ballast deck maintenance, require the expertise and involvement of both departments. The bridge crews work closely with track gangs to handle adjustments to structures required as a result of relay or tie work.

B&B Foreman. The B&B Foreman is responsible for direct supervision of the Bridge and Building crews. These crews are made up of carpenters, helpers, machine operators and truck drivers. The Foreman reports to the B&B Supervisor who plans the projects that the foreman and crew perform. Examples of the type of work for which the Foreman is responsible on a daily basis are tightening bolts on bridges, adjusting bridge ties and other components on bridges and facilities, inspection and maintenance of large culverts, cleaning bridge spans and weeds and grass beneath and around structures, and fueling facility repair. The B&B Foreman is also responsible for safety training and for implementing the B&B Department Safety Policy as it relates to his/her crew. He/she prepares reports on production of crew, time sheets, safety audits and reports. The B&B Foreman also must coordinate work with other MOW crews, *i.e.,* track crews and signal crews and is responsible for ensuring that his/her crews are properly equipped and have the material to handle the projects assigned.

Machine Operators/Truck Drivers. Truck Drivers for the track and B&B departments are responsible for the safe and effective operation of specific types of equipment, *e.g.*, boom trucks, larger maintenance vehicles, hi-rail truck and B&B bridge inspection vehicles. This equipment is critical to the efficient operation of the maintenance crew on both small and larger crews and gangs. The vehicles are used for the safe transportation of manpower, track, bridge and building materials, such as smaller bridge components, ties, other track materials, switch points, and frogs, and for scrap hauling and territory clean-up. Hi-rail trucks are also used for work on track and bridges that are not accessible from the maintenance roads.

Water Service Mechanic. The parties agree that LRR will require a Water Service Mechanic. This position is responsible for piping, testing, inspections, repairs, routine cleaning and pumping of systems, and lubrication of parts to keep them in proper working order on LRR's fueling facilities, water and sewer systems, boiler systems and other utilities on the railroad.

b) Signals Maintenance Personnel

WFA/Basin included 13 signal maintainers in the field and five maintainers assigned to the dispatch center at Guernsey. WFA/Basin Opening Nar. at III-D-82. WFA/Basin also includes one Signal Supervisor. *Id.* WFA/Basin do not explain how they calculated the LRR's signal maintainer needs. However, according to WFA/Basin's count, there are 21,946 signal units on the LRR. This equates to 1,688 units per field signal maintainer.[208] This is an unmanageable workload, far and above the 900-1200 (depending on the size of the territory) per maintainer standard used by BNSF. On top of this already overwhelming workload, WFA/Basin assumes that signal maintainers will also perform

[208] Under BNSF's calculations, LRR has 28,885 AAR signal units. BNSF Reply electronic workpaper "III F 6 CTC.xls," worksheet "Components and Tabulation." This equates to 2,222 units per field maintainer; a wholly unrealistic workload.

work normally performed by communications maintainers. This includes maintaining the microwave system, radios, telephones and data network systems.

Mr. Albin's restatement of LRR's Signal Department includes a full-time staff of 36, including three Supervisors and the following field personnel:

Table III.D.4-7
Signals Department Maintenance Force

Location	Signal Maintainers	Foremen	Inspectors	Dispatch Center Techs	Signal Techs
Donkey Creek	5	1	-	-	-
Logan	5	-	-	-	-
Reno	5	-	-	-	-
Guernsey	4	1	1	5	1
Bridger Jct.	5	-	-	-	-
Sub-Total	**24**	**2**	**1**	**5**	**1**
Grand Total 36 (33+ 3 Supervisors)					

Source: BNSF Reply Exhibit III.D.4-1, Maintenance of Way Organization and BNSF Reply electronic workpaper "LRR Personnel.pdf."

Signal Supervisors. Mr. Albin determined that three signal supervisors are required for the territory covered by LRR, based on the workforce that has been established. One supervisor is located at Donkey Creek and two at Guernsey.

Signal Supervisors are responsible for the direct supervision of all signal operating maintenance crews as well as the yearly capital improvement program. This involves supervision and coordination of signal work on projects such as additional tracks, turnouts and other facility improvements. Under their direct supervision are signal maintainers, electronic technicians, signal inspectors and dispatcher center technicians. The Signal Supervisors, together with the communications Supervisors are directly responsible for maintaining all CTC equipment and dispatching control center equipment. Signal Supervisors supervise inspections, installation and maintenance of highway/railway crossing signal systems. The Signal Supervisors, together with the communications Supervisor are responsible for preparing an operating and capital plan for presentation to the Engineer of Signals and communications; the implementation of the safety program for the department; and are involved in dispatching signal and communications forces in unplanned outages and emergencies requiring signal and communications repairs.[209]

Signal Foremen. The Signal Foremen report to the Signal Supervisors located at Donkey Creek and Guernsey and are responsible for maintaining the specialized equipment relating to the CTC system. The Foremen also coordinate with track gangs to perform testing and to adjust any signal circuits that may have been disturbed by the track gangs during rail relay, tie replacement, and resurfacing activities.

Signal Maintainers. Signal maintainers are required by FRA to perform a number of periodic tests on all wayside signals and highway crossings.[210] Approximately sixty percent (60%) of a signal maintainer's time is spent performing these tests. The other forty percent (40%) is spent on maintenance.[211] LRR would be required to comply with these FRA regulations, but WFA/Basin's estimates and costs for maintenance personnel fail to take these requirements into account as WFA/Basin provides no additional maintenance workers in this area to assist with the daily work.

Based on the network configuration of LRR, BNSF's witnesses determined that the existing LRR territory would have 28,885 AAR signal units requiring 24 signals

[209] Mr. Albin assigned 66 percent of the signal supervisors' time to OE. BNSF Reply Exhibit III.D.4-1.

[210] BNSF Reply electronic workpaper "FRA Signals.pdf."

[211] BNSF Reply electronic workpaper "Operating Percentages.pdf."

maintainers across the system.[212] An AAR signal unit is an industry wide standard that assigns a unit value to every piece of signal equipment on the railroad.[213] The industry standard for AAR units per maintainer varies depending on the FRA requirements and rules for testing wayside signals and highway crossing equipment. Obviously, a maintainer can handle more units if the work units are confined to a small geographical area. In light of LRR's relatively small size, Mr. Albin used a conservative standard of one maintainer for every 1200 signal units, the maximum number of signals per maintainer under BNSF's standard.

Mr. Albin divided the maintainers into five crews: a five-person crew located each at Donkey Creek, Logan, Reno, and Bridger Jct. and a four-person crew at Guernsey. The signal crews maintain the specialized equipment relating to the CTC system and are responsible for keeping in good operating condition all wayside signals, crossing signals, hot bearing detectors, and power switches. Signal crews also must follow the work of track gangs, (relay, ties, surfacing) to test and make adjustments to any signal circuits that may have been disturbed during those activities. These crews work directly with the Track Department on line outages relating to broken rail and switch problems.

Signal Inspector. The signal inspector is required to perform relay testing as well as other signal related circuit testing. An inspector can normally handle about 200 miles of railroad.

---

[212] BNSF Reply electronic workpaper "III F 6 CTC.xls," worksheet "Components and Tabulation."

[213] This standard was established by all railroads so a uniform method of billing could be used at joint facilities or at railroad/railroad crossings. BNSF Reply electronic workpaper "AAR Signal Units.pdf."

Signal Technicians. The signal technician is responsible for keeping the network CTC in tolerance range and calibrating hot bearing detectors annually to maintain system integrity. Regular signal maintainers generally are not technically able to perform these tests.[214]

Dispatch Center Technicians. Mr. Albin agrees with WFA/Basin's inclusion of five signal technicians assigned to the Dispatch Center at Guernsey to staff the center 24/7.

c) Communications Maintenance Personnel

WFA/Basin assumed that signal maintainers will perform all spot maintenance and that the signal test inspector will perform some of the inspections on the railroad's communications system. WFA/Basin Opening Nar. at III-D-85, 95, 98, 109. But WFA/Basin's meager signals department is already saddled by an overwhelming workload. It will have trouble keeping up with the inspection of maintenance of signals and will not be able to assist with the daily maintenance and inspection that must be performed on the communications equipment.

In his restatement of LRR's MOW needs Mr. Albin includes a Communications Department to maintain LRR's critical communications system. He also includes a supervisor at Guernsey, eight field workers and two radio shop technicians. The Communications Department includes the following:

---

[214] *Id.*

Table III.D.4-8
Communications Department Maintenance Force

Location	Communications Maintainers	Microwave Technicians	Communications Technicians	Radio Shop Technicians	Foremen
Donkey Creek	1	-	1	-	-
Guernsey	1	3	1	2	1
Sub-Total	**2**	**3**	**2**	**2**	**1**
Grand Total = 11 (10 + 1 Supervisor)					

Source: BNSF Reply Exhibit III.D.4-1, Maintenance of Way Organization and BNSF Reply electronic workpaper "LRR Personnel.pdf."

Communications Supervisor. The Communications Supervisor is responsible for the direct supervision of all communications operating maintenance crews as well as the yearly capital improvement program.[215] This involves supervision and coordination of communications work on projects. He or she directly supervises maintainers, microwave technicians, communication technicians, radio shop technicians, and the communications foreman. The Communications Supervisor is also responsible for installation, inspections and maintenance of the microwave towers and system, and the radio and telephone systems for the railroad. He or she supervises the locomotive radio shop.

Communications Crews. Each of the two communications crews consists of a communications technician, and a communications maintainer. A foreman based at Guernsey oversees the two crews.

The foreman and technicians maintain the microwave systems, telephones, the infrastructure of the data network, the Automated Equipment Identification (AEI) sites and the equipment identification video equipment located at those sites, and all other train yard cameras and scanning equipment.

[215] As the Communications Supervisor spends 34 percent of his time on capital projects, Mr. Albin assigns 66 percent of his salary to OE costs. BNSF Reply Exhibit III.D.4-1 and BNSF Reply electronic workpaper "Operating Percentages.pdf."

The foreman and communications maintainers install and maintain cable (both underground and overhead) for data to the network, switches, interlockers, and the like. They also perform necessary maintenance on microwave towers and pole lines. They are responsible for responding to emergencies involving microwave and data network outages.

Radio Shop Technicians. Mr. Albin includes two radio shop technicians at Guernsey. The radio shop technicians are responsible for maintaining the radios (diesel locomotive radios, portables, etc.) used on the railroad and maintain a radio repair shop with parts and supplies for repairing locomotive and portable radios and EOTDs.[216]

d) Electrical Maintenance Personnel

WFA/Basin included no electricians in LRR's maintenance-of-way personnel. In fact, WFA/Basin assume no electrical work will be necessary in the first five years of LRR's operations. When electrical work is performed, WFA/Basin assume that it will be handled by outside contractors as part of B&B contract work. WFA/Basin Opening Nar. at III-D-110. However, the funds that WFA/Basin budgets for B&B contract maintenance is equivalent to the amount that BNSF generally pays for major repairs annually, and does not include day-to-day maintenance. In the Electrical Department, day-to-day maintenance includes attending to problems with generators at switch points, power control and distribution in yards and other facilities, lighting and a variety of other tasks for which it is critical to have in-house personnel that are experienced, familiar with the facilities and can respond quickly.

[216] WFA/Basin assumes that radio repairs will be performed by a contractor, but does not budget any costs for this activity.

In his restatement of LRR's Electrical Department personnel for LRR, Mr. Albin assigned this department a foreman and a journeyman electrician located at Guernsey. This Department is set out in the following table.

Table III.D.4-9
Electrical Department Maintenance Force

Location	Foremen	Journeyman Electricians
Guernsey	1	1
Grand Total = 2		

Source: BNSF Reply Exhibit III.D.4-1, Maintenance of Way Organization and BNSF Reply electronic workpaper "LRR Personnel.pdf."

Electrical Department Foreman and Journeyman Electrician. The Electrical Foreman reports to the B&B Supervisor/Electrical and is responsible for supervision of the Journeyman Electrician. The Foreman coordinates the safety program for electrical employees and coordinates electrical maintenance inventory and equipment. Together the Foremen and Journeyman Electrician coordinate with other departments and contractors and maintain the electrical facilities and systems that are necessary for rail operations. A few of the systems that the electrical department maintains are:

- Electric generators at control points,
- HVAC systems in buildings,
- Power distribution systems in yards and other facilities,
- Area lighting in yards and parking lots,
- Power control and lighting in shops and office buildings,
- Electrical and fuel monitoring systems at fueling facilities,
- Emergency power systems,
- Electrical systems for signal and communications,
- Electrical systems at waste water treatment plants, and
- Track switch heaters.

e) Purchasing/Materials Management Maintenance Personnel

WFA/Basin included in LRR's management staff a Manager of Budget and Purchasing, but provided no employees under this individual, possibly on the assumption that materials would be shipped directly to the worksite on a just-in-time basis. Even though much of the material can be shipped directly from vendors to the worksite, some MOW and mechanical materials must be kept on hand for day-to-day maintenance and emergencies. Therefore, a small Purchasing and Materials Management (PMM) department is required for an efficient operation to avoid delays due to waiting for materials. Mr. Albin has estimated that three MOW personnel would be required to handle the purchasing, inventories, receipt, and delivery of all maintenance materials required for LRR.

In BNSF's restatement, the G&A department includes a PMM facility and a Director of Purchasing and a Manager of Purchasing. As the Director and Manager are part of the G&A staff of LRR, their salaries are not included in Mr. Albin's MOW budget. In his restatement of LRR's MOW needs, Mr. Albin includes only the three MOW workers with responsibilities relating to engineering, MOW, operating, and mechanical departments. These workers are set forth in the table below.

Table III.D.4-10
Purchasing MOW Force

MOW Purchasing Manager	1
Machine Operator (forklift)	1
Truck Driver	1
Total	**3**

Source: BNSF Reply Exhibit III.D.4-1, Maintenance of Way Organization and BNSF Reply electronic workpaper "LRR Personnel.pdf."

The PMM serves as a regional store for track, B&B, signal and communications, system electrical material, and roadway equipment parts. It also supplies locomotive and freight car parts to the repair shops, and supplies and monitors fuel, lubricating oil, and other such items for the fueling facilities. Truck deliveries of station supplies, freight car and locomotive parts, maintenance-of-way materials, AFE materials, and work equipment parts are made directly from this facility to departments on LRR. The transportation and disposal of hazardous waste materials also are handled through this facility.

The MOW Purchasing Manager is responsible for supervising the employees engaged in ordering, loading, unloading, storing, issuing, and distributing materials and supplies to the departments. The Machine Operator operates the cranes and other machinery used in disbursing, receiving, loading, and unloading material.

The fueling facilities at Guernsey are supplied and managed by PMM department personnel who supply locomotive and freight car repair parts to the locomotive maintenance and servicing facilities at these points, and to the train yard and freight car repair tracks.

As the Purchasing Department procures and provides materials for both the capital and OE maintenance programs, a portion of the employees' time is allocated to OE maintenance based on the relationship of the materials purchased. Because most of the materials are consumed by OE related activities, Mr. Albin allocates 75 percent of the purchasing employees' time to OE maintenance.

(b) <u>Compensation</u>

WFA/Basin used salaries and wages that are not specific to each position. Rather, using BNSF's Wage Forms A & B, WFA/Basin developed an average wage/salary for all positions reporting to each STB occupation code. To calculate the average salary or wages per employee for each STB code, WFA/Basin first totaled the salaries or wages BNSF paid to each STB code. They then divided the total wages for each STB code by the number of employees that report to that code. WFA/Basin followed this same process to develop overtime and vacation additives which they added to the average salary to calculate an average base salary for each STB code. They then determined compensation to LRR MOW personnel using the STB code base salaries/wages. For example, since STB Code 307 includes mechanics, lubricator technicians, welding crew members, and water plant technicians, WFA/Basin assume the same rate of pay and overtime for each of these positions. In the real-world, however, the rate of pay and overtime vary by position for these personnel.

To the base salaries and wages, WFA/Basin added ten percent for travel and meals and 38.5 percent for fringe benefits. WFA/Basin also provided for miscellaneous small tools and supplies based on 35 percent of the annual wages of LRR's field MOW personnel. WFA/Basin provided $514 per manager/supervisor for office supplies and equipment.

Mr. Albin also calculated labor costs for OE track personnel based on BNSF's Wage Forms A & B which provide the hourly wages for specific MOW positions.[217] However, Mr. Albin calculated the average salary/wages by position rather than by STB code. This methodology is more precise than WFA/Basin's methodology. To the average base salary Mr. Albin added a {   } percent overtime allowance, which reflects BNSF

[217] BNSF Reply electronic workpaper "MOW Compensation.pdf."

engineering office operating expense for overtime in 2004.[218] This is consistent with the percentages reflected in the Wage Forms A & B and is reasonable considering that maintenance individuals are on call at all hours of the day and night, including holidays.

Mr. Albin then applied a {   } percent additive for fringe benefits, based on current BNSF records for 2004 fringe benefits paid to MOW employees.[219] WFA/Basin's 38.5 percent additive is not specific to BNSF's MOW personnel whose salaries and wages WFA/Basin use to determine compensation. By using BNSF's data for calculating all aspects of labor costs, Mr. Albin ensures that all costs are captured.

Mr. Albin also relied on standard railroad practice in developing his additives for materials and supplies and for travel, meals, and accommodations.

For materials and supplies, it is customary for railroads such as BNSF for *each* MOW department to include a labor-based charge for materials and supplies, which includes not only the myriad of maintenance supplies and materials expended in performing its tasks, but also the required safety equipment.[220] The percentage of the additive for this item is based on the actual expenditures by each department for these materials and supplies. As set forth below, Mr. Albin applied each department's appropriate additive to the salaries of employees in that department. The materials additive should not be confused with the additive for *office* supplies and materials. Office

---

[218] BNSF Reply electronic workpaper "MOW Additives.pdf."

[219] *Id.*

[220] This materials additive does not include the track maintenance equipment and tools which are accounted for separately. Nor does it include the cost of materials expended in operating equipment, such as saw blades and drill bits. Mr. Albin has included the cost of equipment consumables in his restatement of LRR's equipment operating and maintenance costs.

supplies include paper, pens, files, stationery, envelopes, and other office supplies. The materials additive covers the particular expendable materials consumed in performing maintenance tasks.

Like WFA/Basin, Mr. Albin applied a ten percent additive to all OE wages and salaries to cover travel, meals, and corporate accommodations.

Mr. Albin's restatement of LRR's annual OE budget for MOW management by department is summarized below.

Systems Engineering Office. The OE portion of the General Office Staff salaries, wages and material/supply additives is $489,157 for managerial staff and $692,152 for Roadmasters and Departmental Supervisors.[221]

Track Department. The Track Department maintenance personnel cost includes a { } materials cost, based on BNSF records of the actual amounts used by BNSF to cover that cost. This covers the cost of small tools such as picks, chisels, wrenches, lining bars, measuring tools, and other such items that are regularly replaced as they wear out, as well as materials expended in the performance of tasks, such as nails, screws, spikes, adhesives, and other typical maintenance items. For the 49 track workers and 10 seasonal workers, that cost is more than $656,227, which is substantially higher than the amount allowed by WFA/Basin. Mr. Albin's total cost for track department OE maintenance, including labor, fringe benefits, and other additives is $5,236,146.[222]

[221] BNSF Reply Exhibit III.D.4-1 and BNSF Reply electronic workpaper "Operating Percentages.pdf."

[222] *Id.*

Bridge and Building Department. The B&B department personnel cost for 7 employees includes a { } additive for structures' maintenance materials. The total B&B OE cost is $654,230.[223]

Signals Department. The Signals Department personnel cost for 33 employees includes a { } materials cost because of the more expensive materials used in signal maintenance. The total cost is $3,192,647.[224]

Communications Department. The communications personnel cost for 10 employees includes a { } additive for materials, based on the actual cost of materials for this group. The total cost is $956,722.[225]

Electrical Department. The Electrical department personnel cost for 2 employees includes a { } additive for materials, due to the increased costs for the tools and supplies involved in maintaining these systems. The total cost is $193,732.[226]

Purchasing and Materials Management. The total OE budget for 3 PMM personnel is $212,444.[227]

Total Salaries and Wages. BNSF Reply Exhibit III.D.4-1 depicts the personnel requirements, additives, and total costs for each of the departments of LRR Engineering Department. The total OE budget for company personnel is $$11,747,320.

---

223 *Id.*

224 *Id.*

225 *Id.*

226 *Id.*

227 BNSF Reply Exhibit III.D.4-1.

(2) LRR OE Track Maintenance Equipment

As discussed above in Section III.D.4.a.(3), WFA/Basin inadequately outfit their MOW field personnel with the equipment necessary to perform their daily maintenance and inspection duties and dramatically understates the cost of this equipment. BNSF Reply Exhibit III.D.4-1 includes a comprehensive list of the Systems Engineering and Departmental equipment requirements that would be reasonable for the daily maintenance requirements of a railroad with the geographic configuration and annual tonnage of LRR. A list of specific quantities and types of equipment and tools needed by each department and each production work gang in each craft area is set forth in Mr. Albin's workpapers.[228] Mr. Albin's estimate of LRR operating expense equipment requirements are based on the projects that would have to be undertaken by each department, the number of crews in each department that would be needed to perform such projects, and the equipment that would have to be available to each crew or crew member, either on its own or in conjunction with other crews, to perform the work most efficiently. Where possible, equipment is shared. However, equipment that is used regularly, such as speed swings, rail grinders, rail saws, drills, air compressors, generators, and rail expanders, must be in sufficient supply to allow each crew ready access to do the small jobs such as grinding frogs and switches and replacing rail that such crews must perform daily.

Mr. Albin's designation of the kinds and quantities of equipment needed to maintain LRR to the appropriate operating and safety standards is far more realistic than WFA/Basin's. In many instances, WFA/Basin's inadequate allocation of equipment would cripple LRR crews' ability to handle multiple tasks simultaneously. Based on

[228] BNSF Reply electronic workpaper "LRR MOW Equipment.pdf."

WFA/Basin's provision of equipment, LRR efficiency would be undercut awaiting the availability of MOW personnel and equipment. Staffing and budget constraints would lead to the deferral of maintenance, which is a dangerous and highly inadvisable practice, as deferral seriously exacerbates existing MOW problems. BNSF has had success in reducing its respective MOW forces to the extremely low present levels over the past five to six years only by researching/testing and equipping its MOW crews with modern day equipment, using concrete ties, and by handling the larger work projects with efficient system production gangs who handle not only the capital replacement programs, but also undercutting, shoulder ballast cleaning, out-of-face surfacing, and switch grinding.[229]

In addition to ownership costs, as discussed above, WFA/Basin substantially understate the cost of operating and maintaining MOW equipment. The operating costs include the costs of consumables such as saw blades and drill bits, fuel and lubricants. Maintenance costs include materials and labor costs, including both shop labor and service and repair performed in the field by third party vendors. These costs are not included elsewhere in the SAC costs as complainant in the AEP Texas case claimed. WFA/Basin assume an arbitrary and unsupported 5 percent of annual ownership costs for equipment maintenance. BN's special study of MOW equipment operating and maintenance costs demonstrates that WFA/Basin's assumption is woefully inadequate.

In his restatement of LRR's MOW equipment costs, Mr. Albin derives the equipment ownership, operating, and maintenance costs from BN's special study of these

[229] BNSF Reply electronic workpaper "BNSF MOW Productivity Data.pdf."

costs.[230] Mr. Albin's estimate of the total annual ownership cost of the maintenance-of-way equipment needed for daily operations on LRR is $1.2 million[231] compared to WFA/Basin's estimate of $937,000 and his estimate of the equipment operating and maintenance costs is $2.6 million as compared to WFA/Basin's $234,250.

(3) LRR OE Contract Work

There are certain maintenance activities that generally are contracted out by both large and small railroads. WFA/Basin's LRR would use contractors for vegetation control, track geometry testing, rail grinding, ultrasonic rail testing, ditching and culvert cleaning, bridge and building inspection and repair, communications and signals, derailment, storm debris and snow removal, washouts, environmental cleanups, crossing repairs, track program maintenance, yard cleaning, equipment maintenance, and miscellaneous outside engineering contracts for surveys and bridge work.[232] WFA/Basin Opening Nar. at III-D-60 to 61. While Mr. Albin agrees with the use of contractors for many of these tasks, he takes issue with the wholesale contracting of communication, bridge and fueling facility maintenance, electrical work, derailment cleanup and restoration of track, and track program maintenance. BNSF has found it more efficient to handle either all or a portion of these responsibilities internally. Mr. Albin also disagrees that the costs are accurately reflected in WFA/Basin's OE costs.

---

[230] BNSF Reply electronic workpaper "MOW Equipment Costs.pdf" and BNSF Reply electronic workpaper "III D 4 Maintenance of Way.xls," worksheet "Annual Spot Equip."

[231] *Id.*

[232] WFA/Basin Opening electronic workpaper workpaper "Spot Maint.xls."

The differences between Mr. Albin's estimates of contract work and those of WFA/Basin are driven for the most part by their use of different unit costs and different standards for determining the frequency with which track maintenance activities must be done. WFA/Basin estimate some unit costs without any support or explanation of what is included in the cost. In other instances, WFA/Basin claim to derive unit costs from BNSF contract costs, but overlook key elements of the costs.

With respect to frequency standards, WFA/Basin's standards are not supported. Mr. Albin bases his standards on the tonnages involved, his many years of experience, and the actual, tried and proven standards currently applied by heavy tonnage railroads.

Moreover, WFA/Basin omitted entirely from its OE track maintenance estimate such crucial activities as

- Stabilization of cuts and fills due to poor soil conditions
- Tunnel maintenance
- Embankment restoration and protection due to erosion of rivers, creeks and drainages
- Coal dust cleanup
- Improvement and correction of drainage problems caused by severe weather conditions
- Maintenance of access roads and fire guards – crucial items to maintaining track structure efficiently
- Special inspection of track and structures during extreme hot and cold weather, rain, ice and snow storms

Mr. Albin assumes that LRR would contract for all or a large portion of these track maintenance projects as well. As shown in BNSF Reply Exhibit III.D.4-1, Mr. Albin has included these costs in his estimate of contract work. Each of the OE contract costs is discussed below.

(a) Vegetation Control

Mr. Albin accepts WFA/Basin's costs for noxious weed spray and brush cutting, but disagrees with WFA/Basin's costs for regular weed spray. WFA/Basin use a unit cost of { } per acre for regular weed spray, which they calculated from a BNSF contract. This cost, however, does not include the cost of chemicals for which BNSF is responsible. In his restatement of regular weed spray costs, Mr. Albin uses BNSF's cost per mile in 2004 of { } for a total cost for regular weed spray of { }.[233]

(b) Track Geometry Testing

Mr. Albin accepts WFA/Basin's unit costs and testing frequency for track geometry testing.

(c) Ultrasonic Rail Testing

WFA/Basin propose to perform ultrasonic rail testing on mainline track four times a year, purportedly based on their "expert's experience on western railroad heavy-haul lines." WFA/Basin III-D-105. They apply a unit cost of { } per track miles based on invoices produced by BNSF in discovery. Mr. Albin accepts WFA/Basin's unit cost, but disagrees with the standard WFA/Basin apply to determine the number of miles tested. Mr. Albin determined the appropriate testing for LRR by applying BNSF's standard for rail testing on lines which is to test all rail every 15 MGT with a minimum of four tests per year on rail above 50 MGT and two times per year on rail with less than 50 MGT.

Mr. Albin determined that 1,519 miles of rail would need to be tested annually on LRR for a total cost of { }.

---

[233] BNSF Reply Exhibit III.D.4-1 and BNSF Reply electronic workpaper "BNSF Contract Unit Costs.pdf."

(d) Rail Grinding

WFA/Basin's standard for rail grinding is to grind every 50 MGT on curves of three degrees or more; to grind all other rail every 100 MGT for standard rail and every 300 MGT for premium rail. WFA/Basin Opening Nar. At III-D-111. Using this standard, WFA/Basin calculated that 210.03 miles would be ground annually. WFA/Basin use a unit cost of { } per mile for track and crossings and a unit cost of { } for switch grinding. Neither their standards nor their unit costs are appropriate. WFA/Basin's grinding standards are purportedly based on a study of rail grinding by CN and TTCI reported in December 2000.[234] But that study does not support such infrequent grinding as WFA/Basin claim.

The CN/TTCI study that was reported in December 2000, studied the impact of varying rail grinding frequencies on six test sites on CN. The test track sections each consisted of "concrete ties, elastic fasteners, and new premium rail made to CN clean-steel specifications" installed on curves of 3 degrees and greater. Each test site was divided into three sections. One section was ground every 12 to 13 MGT, one section at every 21 MGT, and one section was left un-ground as long as possible. While the no-grind group was able to withstand 164 MGT before grinding was necessary, it then required multiple passes to remove damage and re-profile, and required grinding again at 176 MGT and 233 MGT. But CN\TTCI did not conclude from this study, as WFA/Basin imply, that such a corrective grinding regime was advisable. Far from it. CN recommends a preventative grinding strategy that includes grinding at average intervals of about 20 MGTs in territory

[234] Kevin Sawley and John Robinson, *Rail Grinding on CN*, Railway Track & Structures, December 2000. BNSF Reply electronic workpaper "Rail Grinding Articles.pdf."

with severe conditions and a high percentage of curves and at intervals of about 30 MGTs in territories with moderate conditions and a lower percentage of curves.[235]

Another problem with WFA/Basin's reliance on the results of the no-grind testing regime, is that while CN was initially able to avoid grinding the test rail for 164 MGTs, there is no evidence to suggest that it is sensible to extend grinding intervals to this length. Defects began to form long before grinding at 164 MGT. Since the test track was under constant monitoring, any potentially catastrophic defect would have been identified long before it became a real problem.

Since that study, railroads have continued to study and refine their rail grinding practices. Not one has adopted a corrective rail grinding strategy as WFA/Basin proposes. Indeed, there is broad consensus in the industry that an aggressive preventative grinding regime, such as BNSF's, is optimal.[236]

BNSF's general policy is to grind curves greater than three degrees every 15 MGT, curves less than three degrees every 30 MGT and tangents every 60 MGT to maximize rail life. The parties agree on the number of passes: one pass is sufficient if grinding is performed on the above frequencies for tangent and curves less than three degrees. Curves greater than three degrees as a general rule require two passes. BNSF's standards are the result of decades of experience and experimentation with grinding frequencies, and are considered the "best practices" in rail grinding.[237] If the rail is not ground regularly, it

---

[235] *Id.*

[236] Peter Sroba, Eric Magel, and Fred Prahl, *Getting The Most From Rail Grinding*, Railway Track & Structures, December 2003, at 30. Huimin Wu, *Two key aspects in rail grinding - effectiveness and efficiency*, Railway Track & Structures, at 17, December 2004.

[237] *Getting the Most From Rail Grinding,* at 30.

deteriorates and additional passes at additional cost would be required to properly profile the rail. It is important that a rail profile be maintained that fits the wheel profile of the heavy cars. If this is not done, areas of high stress are created in the ball of the rail, resulting in defects and fatigue.

The only way heavy-haul Class I railroads have been able to improve rail life to one (1) BGT and beyond is through a diligent rail maintenance program. Strict adherence to an aggressive rail grinding schedule is an integral part of such program.[238]

Even more important is an aggressive special grinding program at switches and crossings involving grinding at the frog, stock rail and switch points. Switches are by far the highest maintenance item on a heavy tonnage railroad both for track and signal maintenance forces. Modern switch grinding equipment has made it possible to improve turnout component life and to reduce outages at turnouts resulting from switch points and other components not matching or being out of alignment. Special attention must also be given to rail at crossings.[239] The rail at crossings takes both the load from trains and from traffic and thus requires special care. Like WFA/Basin, Mr. Albin has included grinding of switches in his rail grinding calculations.

---

[238] Tom Judge, *Grinding Delivering on its Promises*, Railway Track & Structures, June 2003, at 53; Robert J. Derocher, *Keeping a Low Profile*, Progressive Railroading, June 2003, at 50; Mike Roney, Dave Meyler, Eric Magel and Peter Sroba, *Optimizing the System on CPR's BC South Line*, Railway Track & Structures, July 2001, at 26; Mischa Wanek, *HAL Maintenance of Way Demands: Grinding and Lubrication*, Railway Track & Structures, July 2002, at 26. BNSF.RP.WP.III.D.4-0197 to 0213.

[239] Under WFA/Basin's plan to use asphalt crossings, crossings could not be ground by large production grinders due to flangeway restrictions. BNSF's use of removable concrete panels at crossings allow production grinders to grind crossings as they grind other line-haul track.

In addition to grinding far too infrequently, WFA/Basin use unit costs that do not account for the total costs of rail grinding. WFA/Basin derived its unit cost from a BNSF invoice attached to a BNSF contract with { }. WFA/Basin's unit cost includes some labor and some costs for fuel and water, but omits the additional costs that, under BNSF's contract with Loram, are BNSF's responsibility. These include providing {

}.[240] BNSF's actual cost per pass mile in 2004, which includes the contract and additional costs, was ${ } per pass mile.[241] Mr. Albin determined that LRR would require 634 pass miles including a single pass on tangents and curves less than three degrees and a double pass on curves greater than three degrees, for an annual cost for rail grinding of ${ }. Mr. Albin's calculations are included in BNSF Reply electronic workpaper "III D 4 Maintenance of Way.xls," worksheet "Ton Specific."

WFA/Basin similarly understate BNSF's cost for switch grinding by using the contract price and failing to account for the costs that are BNSF's responsibility.[242] Mr. Albin included switch grinding using BNSF's standard grinding frequency of 50 MGT and BNSF's actual 2004 cost of ${ } per switch for a total cost of ${ } per year.[243]

---

[240] BNSF Reply electronic workpaper "Grinding Contracts.pdf."

[241] BNSF Reply electronic workpaper "BNSF Contract Unit Costs.pdf."

[242] BNSF Reply electronic workpaper "Grinding Contracts.pdf."

[243] BNSF Reply Exhibit III.D.4-1 and BNSF Reply electronic workpaper "BNSF Contract Unit Costs.pdf."

(e) Miscellaneous Outside Contracts

For miscellaneous contracts, WFA/Basin include $225,000, but provide no support for this amount. Mr. Albin agrees with WFA/Basin's costs which would cover miscellaneous engineering and design costs for buildings, bridges, and fueling facilities.

(f) Bridges and Buildings

For all contract maintenance on buildings, WFA/Basin has included $216,679, representing 0.5 percent of the original building cost estimated by WFA/Basin. Since WFA/Basin include no electricians, or carpenters in LRR's internal workforce, this amount would have to include most facets of building maintenance, including the numerous daily repairs and spot upkeep that LRR's numerous buildings will require. While in Mr. Albin's experience, BNSF generally incurs annually 0.5 percent of the original construction cost for major repairs, this amount does not include the day-to-day maintenance and upkeep which are performed in-house on BNSF.

Mr. Albin's restatement of the LRR's MOW workforce includes employees to perform the day-to-day building maintenance and general upkeep. Mr. Albin has included 0.5 percent of the restated building construction costs to account for contract maintenance costs to perform major repairs.[244]

(g) Ditching

WFA/Basin use two-foot ditches on the LRR. WFA/Basin estimate that ten percent (21.8) of the route miles would require ditching annually at a cost of ${ } per track mile based on BNSF discovery documents. However, WFA/Basin erroneously calculate costs based on ditching of just 10.72 of the route miles. Mr. Albin accepts

[244] BNSF Reply Exhibit III.D.4-1.

WFA/Basin's estimate that ten percent of route miles will need to be tested annually, but disagrees with WFA/Basin's calculation of the unit cost.

To develop a purported per track mile unit costs, WFA/Basin use BNSF's invoices from { }. However, WFA/Basin divide the total cost by the total number of *pass* miles shown on each of the invoices. This produces a per *pass* mile cost. The invoices also show total number of *track* miles. Dividing total cost by total number of *track* miles yields a per track mile cost of { }[245] BNSF also pays additional cost for fuel and for a full-time pilot/flagmen for the project and BNSF hires, on an as-needed basis, laborers to perform special ditching around culverts and bridges.[246] In 2004, BNSF's per mile cost for ditching was ${ }, which results in total ditching costs for LRR of ${ }.[247]

(h) <u>Snow Removal, Storm Debris.</u>

WFA/Basin has included $50,000 for snow removal and $25,000 for storm debris removal, but has not provided any support for these amounts. According to BNSF records, in 2004, BNSF spent a total of ${ } on snow removal across BNSF system which equals approximately ${ } per track mile.[248] In addition to snow removal, these expenditures account for costs associated with ice, storms, flooding and other weather

---

[245] BNSF Reply electronic workpaper "Ditching Contract.pdf."

[246] *Id.*

[247] BNSF Reply Exhibit III.D.4-1 and BNSF Reply electronic workpaper "BNSF Contract Unit Costs.pdf."

[248] *See* 2004 R-1, line 111.

related costs.[249] Mr. Albin applied the per track mile cost to LRR's restated track miles for a total snow removal and weather-related cost of ${ }.[250]

(i) Derailment And Casualty Repairs

WFA/Basin has included $750,000 for derailments and $40,000 for washouts. While Mr. Albin disagrees with the amounts allocated to each of these categories, he agrees that the total amount is a reasonable estimate of what the LRR can expect to incur annually in derailment and other casualty losses.

(j) Environmental Cleanup & Prevention

WFA/Basin included $24,000 for environmental cleanup based on the theory that "environmental cleanups are infrequent on a coal only railroad and that its fueling facilities are adequately constructed to protect against uncontained discharges. Mr. Albin disagrees with WFA/Basin's estimate of environmental clean-up costs.

Railroads routinely incur substantial annual expenses for environmental mitigation associated with maintenance of fueling facilities and clean up of fuel spills. Over the past five years, BNSF incurred more than ${ }, or more than ${ } annually, for environmental mitigation and diesel fuel clean-up at BNSF's fueling facility in Guernsey.[251] Indeed at BNSF's Belen, New Mexico fueling facility which is a state-of-the-art facility that is well maintained, BNSF's annual mitigation costs have run more than ${ } over the past several years. The Belen facility has all the proper containment and complies with all regulations. Unfortunately, spills occur at even the best maintained

---

[249] Does not include major washouts, slides and other similar casualties.

[250] BNSF Reply Exhibit III.D.4-1.

[251] BNSF Reply electronic workpaper "Environmental Costs.pdf."

facilities and clean-up costs are expensive and must be dealt with immediately. In addition to the costs for environmental mitigation, BNSF incurs annual repair and inspection costs. At Belen, these costs have averaged { }.[252] It is only reasonable to assume that the fueling facilities on the LRR would incur similar costs ({ }). The costs incurred by BNSF are for clean-up/mitigation costs and normal costs of inspection and repairs of fuel tanks, pumps and pipelines. Therefore, Mr. Albin included ${ } environmental mitigation and fuel repair costs in his restatement of OE contract costs.

(k) Yard Cleaning

WFA/Basin include $27,862 for annual yard cleaning costs based on a frequency of cleaning each yard once-a-year and daily unit costs derived from a BNSF contract with { } Mr. Albin agrees with WFA/Basin's frequency and does not take issue with the contract unit costs. Mr. Albin disagrees, however, with WFA/Basin's development of total yard cleaning costs. WFA/Basin makes aggressive assumptions regarding the number of days it will take to perform yard cleaning and therefore understates total costs for this activity. In his restatement, Mr. Albin uses BNSF's average unit cost of { }per yard track mile. Based on this per mile cost, Mr. Albin includes $55,090 { } for yard cleaning.

(l) Special Maintenance Costs

In certain areas of the LRR route, BNSF currently confronts special maintenance problems. These include ballast fouling caused by coal dust, embankment stabilization

[252] Mr. Albin uses the Belen repair and inspection cost data since similar data were not available for Guernsey.

issues, and curve alignment and gauging problems. BNSF incurs additional maintenance costs in addressing these challenges. WFA/Basin has not explained how LRR will avoid these problems and fail to include any costs to address them.

i) Coal Dust in the PRB

Coal dust is a significant problem in the PRB. The strong Wyoming winds blow the dust off the open top coal cars exiting the mines and spread it over the entire embankment. The coal dust covers the track and fouls the ballast, leaving a blackened layer of dust from several inches to a foot and a half thick. Photographs provided by BNSF Roadmaster Wayne Meidinger effectively demonstrate the problem.[253] Coal dust causes a number of problems. It traps the water and saturates the sub-grade causing failures and leading to slow orders. It also presents a serious fire safety hazard as any fire on the right-of-way will ignite the coal. Burning coal can only be extinguished by pouring dirt over it. BNSF maintenance supervisors have worked with local county fire marshals to devise a plan to deal with this situation.[254] In 2002, Mr. Meidinger undercut eight miles between MP90 and 98 (between Bill and Walker, Wyoming) to clear the track of coal. Using a dozer, grader and loader, they gathered, loaded, and hauled to North Dakota for disposal approximately 100 carloads of dust spoils. A similar campaign was undertaken on several other stretches of the Orin Line. These projects involved removing coal dust ranging in depths from two to eight inches and in width from eight to thirty feet, as shown

[253] BNSF Reply electronic workpaper "III D 4 COAL DUST ON THE ORIN LINE.ppt."

[254] In 2003, BNSF was charged ${ } by the Wright, Wyoming Fire Department for fighting coal dust fires on BNSF right-of-way. BNSF Reply electronic workpaper "Coal Dust.pdf."

on a chart in Mr. Albin's workpapers.[255] The photographs, showing before and after clean-up, depict the extent of the problem and the magnitude of the maintenance effort.[256]

On a 2003 inspection trip, Mr. Albin observed this problem firsthand. He observed that the worst fouling occurs between MP27 and 58 on the Orin Subdivision with lesser problems between MP 0 and 27 on the Orin Subdivision and between Gillette and Kara, Wyoming on the Black Hills Subdivision. BNSF budgeted ${ } for clean-up work done in 2003 and 2004. This work includes spot, switch, and out-of-face undercutting, shoulder ballast cleaning, and surfacing. BNSF continues to incur such costs.

LRR, with coal tonnage comparable to several line segments on the Orin Line, can expect to suffer similar coal dust problems. In his restatement, Mr. Albin includes { } annually to address coal dust problems which is conservative based on BNSF's experience.

ii) <u>Stabilization Issues</u>

BNSF incurs additional costs to address stabilization issues related to tunnels and embankments that are located on the line segments replicated by LRR. The specific challenges and related costs are discussed below. Since BNSF capitalizes approximately 50 percent of the expenses associated with this work, in his restatement, Mr. Albin allocates the costs identified below equally between spot and capital expenses.

---

[255] *Id.*

[256] BNSF Reply electronic workpaper "III D 4 COAL DUST ON THE ORIN LINE.ppt."

a) Tunnel No. 1

BNSF currently incurs special maintenance challenges at Tunnel No. 1 located at MP 96.85 west of Guernsey. Tunnel No. 1 is nearly half a mile long and is supported by timber walls and arch sets that keep loose rock from falling on to the track and drainage ditches. These timber walls and arch sets require frequent repair. In addition, the tunnels drainage system regularly requires repair and the ballast regularly requires cleaning. BNSF spent { } in 2005 on correction of these items, or { } per year averaged over 5 years.

b) Tunnel No. 2

Since 1998, when BNSF day-lighted Tunnel No. 2 located at MP 98.15, west of Guernsey, BNSF has had to perform annual maintenance to protect against erosion of the steep walls on either side of the day-lighted tunnel. When it day-lighted the tunnel, BNSF installed hard rock bolts and shot-crete to protect the steep walls. Unfortunately, this protection periodically fails and BNSF has to perform repairs regularly. In 2002 and 2003, BNSF incurred { } to repair the protection.[257] This work has been performed by outside contractors. BNSF is continuing to perform repair work at an estimated annual expenditure of { }[258]

c) Tunnel No. 3

BNSF incurs annual maintenance costs to maintain a 1500-foot long tunnel located at MP 101.5 west of Stokes, Wyoming. Specifically over the past three years, BNSF has incurred { } to repair the tunnel lining. Over the past two years, it has incurred

[257] BNSF Reply electronic workpaper "Stabilization.pdf."

[258] *Id.*

{ } to maintain the tunnel drainage system. BNSF's average annual costs for maintaining this tunnel are { }.[259]

d) Wendover Canyon

The track running through Wendover Canyon between Stokes and Cassa requires special attention annually. The track runs through high, steep and unstable cuts that suffer isolated slip-outs and rock falls. BNSF estimates their annual cost of clean-up for this stretch of track to be { }.[260]

(4) Summary Of Maintenance-Of-Way OE

WFA/Basin's evidence fails to support their assumptions about the maintenance requirements of LRR's plant. WFA/Basin's MOW staff is meager, their equipment inadequate, and they have offered little or no support for their numbers. With respect to operating expense contract costs for activities that are typically contracted out, WFA/Basin's estimates are understated because they use unsupported frequencies for track maintenance activities such as rail grinding and testing, miscalculate the quantities for other contract work such as weed control, and apply unsupported or incomplete unit costs. Under SAC principles, WFA/Basin have the burden of proof to show in their opening evidence that their assumptions are reasonable and that their costs are supported. WFA/Basin's evidence fails to meet their burden of proof on maintenance of way OE.

BNSF's witness Mr. Albin has developed a detailed bottom-up analysis of the MOW costs for the LRR. BNSF's evidence is well supported, detailed and conservative.

---

[259] *Id.*

[260] *Id.*

WFA/Basin's total MOW OE cost is \$9.9 million. Mr. Albin's total restated cost is \$19.7 million. BNSF's evidence should be used in this case to assess MOW costs for the LRR.

b. LRR Capital Maintenance-Of-Way

Even though the annual capital cost for replacement of assets is not added into the stand-alone costs, the exercise of developing these costs demonstrates the unrealistic nature of WFA/Basin's MOW plan and allows the Board to compare WFA/Basin's cost estimate with other real-world experience.[261] The development of a capital MOW plan also allows the Board to ensure that the capital MOW activities are properly accounted for in the LRR operating plan.

Although WFA/Basin claim that LRR's total capital of LRR's capital MOW costs are nearly \$32 million, which coincidentally is similar to Mr. Albin's restatement, this number is inconsistent with WFA/Basin's evidence and results from several linking errors in their electronic spreadsheets. When these errors are corrected, WFA/Basin's evidence shows total capital MOW costs of just \$13.5 million, which dramatically understates LRR's normalized maintenance costs. This understatement results from WFA/Basin's underestimation of the frequency that assets will need to be replaced on LRR and their use of contractors to perform all normalized maintenance work without allocating sufficient resources to perform the work.

WFA/Basin make erroneous assumptions regarding the useful lives of various components of the track structure on LRR thereby understating the frequency that such

[261] The program replacement of capital assets (or the capital portion of MOW expenditures) is already accounted for in the DCF analysis through the inherent depreciation assumptions. Nevertheless, the development of the total MOW budget, operating and capital, allows the Board to ensure that all MOW costs are appropriately accounted and that the MOW plan is realistic.

assets will need to be replaced. Specifically, WFA/Basin overestimate the useful lives of LRR's crossings, ties and rail. WFA/Basin use asphalt and Epflex on all of LRR's crossings and estimate a useful life of 53 years for each crossing.[262] Asphalt, however, must be ripped up and replaced each time the crossing track is resurfaced. Since crossings on LRR will be resurfaced every third year the useful life of an asphalt crossing on LRR is just three years. Epflex also must be removed for re-surfacing and, while it can be reused, it can only be reused a few times before it must be replaced. In the real world, BNSF uses concrete panel crossings on most of the route replicated by LRR. The panels can be easily removed to allow maintenance on the crossing and then placed back into position. As explained in section III.F.8.c. of this reply, BNSF constructs LRR using concrete panel crossings on crossings that are constructed in the real world with concrete.

As to ties, WFA/Basin propose to use timber ties on all of LRR and estimate a useful tie life of 21 years. While this life might be achievable on a low tonnage rail line, it is unrealistic for a high tonnage coal line such as LRR where the ties are subject to the continuous pounding of heavy axle loads. As a result, timber ties on high tonnage lines suffer far more rapid mechanical wear, particularly on curves, than timber ties on lighter tonnage lines. This rapid deterioration results in shorter useful lives and more frequent maintenance needs than WFA/Basin estimate. The poor performance of timber ties on lines such as those replicated by LRR is why BNSF has replaced timber ties with more durable concrete ties on its heavy haul coal lines. As explained in section III.F.3.c. of this

[262] WFA/Basin also misstate the number of crossings on LRR by half. They included in their MOW costs only 100 of the 198 crossings they construct on the LRR. In this reply, BNSF witnesses determined that LRR will have 209 crossings. BNSF Reply electronic workpaper "III F LRR Construction.xls," worksheet "At Grade Crossings."

reply, BNSF constructs LRR using concrete ties where BNSF currently uses concrete ties in the real world.

WFA/Basin's rail-life assumptions are unrealistic in light of their proposed rail grinding schedule. As discussed in section III.D.4.i.(3) above, BNSF has been able to achieve rail lives similar to those proposed by WFA/Basin only through frequent inspection and rail grinding. WFA/Basin's approach ignores the large body of evidence that support BNSF's grinding standards. Under WFA/Basin's MOW approach to rail grinding, LRR can expect to experience far more rail outages and far shorter rail lives, particularly on curves, than WFA/Basin claim.

Lastly, the Board has already recognized that heavy reliance on outside contractors to perform MOW work is improper.[263] Yet, WFA/Basin assume that *all* normalized maintenance will be performed by outside contractors. In support of their use of contractors, WFA/Basin cite an article which they claim shows that railroads are increasingly using outside contractors to perform MOW activities. WFA/Basin Nar. At III-D-74. That article, however, concerns the use of engineering and design firms to perform engineering design and construction services and has nothing to do with use of contractors to perform MOW work.[264] In addition, many of WFA/Basin's costs for such work are arbitrary and unsupported. For example, WFA/Basin's assume that LRR will incur just $4,000 in capital maintenance for each bridge every 5 years. As discussed in section III.D.4.b. above, this amount might cover the cost of minor bridge repairs, but is plainly insufficient to cover the cost of any major bridge work.

---

[263] *E.g. Xcel* at 79.

[264] WFA/Basin Opening workpaper Vol.8, pp. 5208-5211.

In his restatement of capital costs, Mr. Albin developed his capital budget for programmed maintenance in the same way that he developed the operating maintenance-of-way budget – adhering to the principles for classifying MOW activities and costs as either capital or operating expense. He calculated the annualized replacement costs for each category of capital asset using asset lines that are based on BNSF's real-world experience. For the programmed track maintenance he developed both the labor and materials cost for track replacement by building from the bottom up the system production gangs that are needed to handle the annual program maintenance for LRR. Mr. Albin's restatement of LRR's Capital MOW costs totals $32 million. Details of his capital budget calculations are included in his workpapers and in BNSF Reply Exhibit III.D.4-1.[265]

(1) Work Trains

WFA/Basin acknowledge that the LRR will require a work train to deliver MOW materials. Other than the equipment, however, WFA/Basin include no costs to cover the crews that are required to load and unload the work train. In his restatement of LRR's MOW needs, Mr. Albin includes the costs of these crews. Mr. Albin determined the number of work train days that would be needed for each activity, including tie distribution, rail gang distribution, surfacing and ballast distribution, and miscellaneous scrap clean-up. He then estimated the crews requirements for these activities. Mr. Albin estimates that maintenance of LRR would require 236 work train days, 177 days for program replacement work and 59 days for miscellaneous maintenance work at { }

[265] BNSF Reply electronic workpaper "III D 4 Maintenance of Way.xls."

per day for track maintenance for an annual OE cost of $353,683 and a capital cost of $1,061,050.[266] The equipment cost for the work train are included in Section III.D.3.

c. Total Annual Maintenance-Of-Way Costs

Table III.D.4-11
Comparison Of Summary Of BNSF Estimate Of Total Maintenance And OE Maintenance Costs To WFA/Basin's Opening Statement

Item	BNSF (Millions)	WFA/Basin (Millions)
Personnel - OE	$11.75	$7.66
Personnel - Capital	$6.94	$1.13
Training*	$1.35	$0.36
Normalized Track Materials and Capital Maintenance	$16.82	$13.52
Contract Work - OE	$3.66	$2.20
Contract Work - Capital**	$1.31	$0.23
Equipment	$8.71	$0.94
Work Train	$1.41	$0.00
Total Maintenance Cost	**$51.95**	**$26.04**
Operating Expense	$19.75	$9.21

* Training costs are addressed in Section III.D,3.c.

** Most of WFA/Basin's capitalized contract work is included in the Normalized Track Materials and Capital Maintenance cost.

Source: WFA/Basin Opening electronic workpapers "Spot Maint.xls" and "LRR Operating Expenses.xls." BNSF Reply Exhibit III.D.4-1.

WFA/Basin have understated the MOW costs associated with maintaining a railroad designed to accommodate the traffic designated for LRR. As demonstrated in section III.D.4.(a) above, WFA/Basin's MOW costs are dramatically lower than BNSF's real-world costs of maintaining the Joint Line in 2003. By contrast, Mr. Albin's costs

[266] BNSF Reply electronic workpaper "III D 4 Maintenance of Way.xls," worksheet "Work Train."

compare favorably to BNSF's Joint Line costs. The comparison is presented in BNSF Reply electronic workpaper "LRR MOW Comparison.xls."[267]

5. Leased Facilities

The LRR does not lease any facilities.

6. Loss & Damage

WFA/Basin determines the LRR's loss and damage amount of $0.3 million based on BNSF's 2003 actual loss and damage per ton for coal multiplied by LRR's base year tonnage. BNSF disagrees with WFA/Basin's use of just one year of data. Since loss and damage amounts can vary significantly between years – a 27% decrease between 2002 and 2003, for example – a multi-year sample is required to properly include the loss and damages amounts for the LRR.[268] In this reply, BNSF includes loss and damage per ton for coal based on an average of BNSF's actual loss and damage costs for the 2002-2004 period.[269]

7. Insurance

WFA/Basin methodology for determining LRR's casualty and insurance costs understates the costs LRR can reasonably expect to expend for these items. WFA/Basin calculated insurance costs based on BNSF's 2003 ratio of insurance to freight operating

[267] In order to make an apples-to-apples comparison of Mr. Albin's restated OE MOW costs for LRR to BNSF's OE MOW 2003 Joint Line costs estimated by WFA/Basin, Ms. Gouger removed costs from Mr. Albin's restatement that are not included in BNSF's 2003 Joint Line costs. These include yard, start-up recruitment/training, special stabilization, and derailment costs. BNSF Reply electronic workpapers "LRR MOW Comparison.xls" and "Yard MOW Costs.pdf."

[268] 272,529 / 372,272 – 1 = -27%.

[269] *See* BNSF Reply electronic workpaper "III D Operating Expense.xls," worksheet "Summary."

expenses (less depreciation, casualties and insurance) at 3.59% to arrive at a cost of $3.8 million in 2004.[270] However, BNSF's ratio is not indicative of the costs LRR would incur. A carrier the size of the hypothetical LRR would not be able to achieve the low casualty and insurance costs as a percentage of operating expenses that are enjoyed by BNSF. Size makes a significant difference in the total insurance costs of a carrier. Class I carriers the size of BNSF are self-insured with deductibles per incident of around $25 million. Limited resources and investor demands require smaller carriers to self-insure at much lower levels, approximately $5 million. Beyond the self-insured level, Class I carriers, and most regional and shortline carriers, secure insurance through major insurers such as Marsh, AIG and Aon. The lower the self-insurance level, the higher the insurance premiums. Over a long period of time, all other things being equal, it costs more to insure a risk than it does to bear it (otherwise the insurance industry would not exist). As a result, smaller carriers pay more in insurance and casualty costs as a percentage of their expenses than larger carriers do.

The experience of Class I carriers with less than $1 billion is an appropriate basis for determining LRR's insurance costs. The ratio of insurance to freight operating expenses (excluding depreciation and casualty and insurance expense) for these carriers was 5.36% in 2003 and 3.2% in 2004 for an average of 4.28%.[271] Applying that ratio to the 2004 LRR freight operating expense of $162.1 million (less depreciation and casualty and insurance costs) yields an annual casualty and insurance expense for LRR of $6.9 million.

[270] BNSF's 2004 R-1 produces an insurance ratio of 6.7%, significantly higher than the 2003 insurance ratio of 3.59%.

[271] *See* BNSF Reply electronic workpaper "insurance.xls."

Since LRR's operating expenses will grow over the twenty year forecast period, LRR's insurance costs will increase throughout the period.

8. Ad Valorem Tax

WFA/Basin's calculation of ad valorem taxes includes an improper adjustment that understates LRR's tax liability. To calculate LRR's tax liability, WFA/Basin applied the amount that BNSF paid the state of Wyoming per route mile in 2003 to LRR route miles to arrive at a total of { } million. However, they then improperly adjusted this total tax liability on the assumption that LRR would not have to pay taxes on its locomotives and rail cars because they are leased. This assumption is wrong. Under Wyoming law, tax is assessed on all property owned or used by a railroad in its business.[272] In short, both owned and leased equipment are included in the value of the railroad. On reply, BNSF includes the unadjusted { } million that WFA/Basin calculated.

9. Other

BNSF discusses the calculation of operating statistics in section III-C and does not repeat that discussion here.

---

[272] BNSF Reply electronic workpaper "Wyoming Tax Regs.pdf."

a. Summary of Annual Operating Expenses

Table III.D.9-1
Annual Operating Expense For The LRR – 2004

Item (1)		WFA/Basin LRR Amount ($ millions) (2)	BNSF LRR Amount ($ millions) (3)
1.	T&E Personnel	16.9	29.6
2.	Locomotive Lease Expense	13.6	15.6
3.	Locomotive Maintenance Expense	9.6	13.4
4.	Locomotive Operating Expense	26.2	37.5
5.	Rail Lease Expense	2.7	6.1
6.	Material and Supply Operating	1.0	1.6
7.	Ad Valorem Taxes	{ }	{ }
8.	Operating Managers	9.6	11.8
9.	General and Administrative (including IT)	14.8	25.2
10.	Loss and Damage	0.04	0.03
11.	Insurance	3.8	6.9
12.	Maintenance of Way	9.9	19.8
13.	**Total**	{ }	{ }
14.	Startup and Training	7.0	12.3

For this comparison, annual training expenses have been removed from WFA/Basin's G&A expenses.

E. NON-ROAD PROPERTY INVESTMENT

1. Locomotives

WFA/Basin assume that all of the LRR's locomotives would be leased. BNSF accepts that arrangement and discusses the LRR's locomotive requirements and leasing costs in Section III.D.1.

2. Railcars

WFA/Basin assume that all of the LRR's railcars would be leased. BNSF accepts that arrangement and discusses the LRR's railcar requirements and leasing costs in Section III.D.2.

3. Other

WFA/Basin assume that the LRR would lease other equipment, including company vehicles, maintenance-of-way equipment, radios and telephones. BNSF discusses MOW equipment in Section III.D.4 and radios and telephones in III.D.3.

WFA/Basin assume that the LRR would purchase computers and related hardware. BNSF accepts that arrangement and discusses the LRR's IT requirements in Section III.D.3.d.